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NAS CECIL FIELD  
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SITE MANAGEMENT PLAN 2ND QUARTER 2013 NAS CECIL FIELD FL  
4/1/2013  
RESOLUTION CONSULTANTS

**SITE MANAGEMENT PLAN  
2ND QUARTER 2013**

**FORMER NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

Prepared For:

**BRAC Program Management Office Southeast  
4130 Faber Place Drive  
North Charleston, South Carolina 29405**

and



**Naval Facilities Engineering Command Southeast  
Building 135 North  
P.O. Box 30  
Jacksonville, Florida 32212-0030**



**Resolution Consultants  
*A Joint Venture of AECOM & EnSafe*  
1500 Wells Fargo Building  
440 Monticello Avenue  
Norfolk, Virginia 23510**

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## LIST OF ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
AIMD	Aircraft Intermediate Maintenance Division
APR	Alternate Procedures Request
AS	Air sparging
AST	Above ground storage tank
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BOA	Basic ordering agreement
BRA	Baseline risk assessment
BRAC	Base Realignment and Closure
BS	Biosparging
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CA	Contamination Assessment
CAR	Contamination Assessment Report
CARA	Contamination Assessment Report Addendum
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of concern
COJ	City of Jacksonville
CSR	Confirmation Sampling Report
CY	Calendar Year
DCE	Dichloroethene
DoD	Department of Defense
DPT	Direct-push technology
DRMO	Defense Reutilization and Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
EMT	Earth-Mounded Tank
ESB	Explosives Safety Board
ESD	Explanation of Significant Difference
FDEP	Florida Department of Environmental Protection
FFA	Federal Facility Agreement
FID	Flame ionization detector
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
FTMR	Field Task Modification Request
FY	Fiscal year
GCTL	Groundwater Cleanup Target Level
HASP	Health and Safety Plan
HSWA	Hazardous and Solid Waste Amendments

IRA	Interim Remedial Action
IRP	Installation Restoration Program
iSOC	In-Situ Oxygen Curtain
JAA	Jacksonville Aviation Authority
JETC	Jet Engine Test Cell
KAG	Kerosene Analytical Group
LTM	Long-Term Monitoring
LUC	Land Use Control
MCL	Maximum Contaminant Level
MDAS	Material Documented as Safe
MEC	Munitions and Explosives of Concern
MIP	Membrane interface probe
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
MONA	Monitoring Only Natural Attenuation
MOP	Monitoring Only Plan
MRA	Munitions Response Area
MRP	Munitions Response Program
MTBE	Methyl Tertiary Butyl Ether
NADC	Natural Attenuation Default Concentration
NAMP	Natural Attenuation Monitoring Plan
NAMPAO	Natural Attenuation Monitoring Plan Approval Order
NAS	Naval Air Station
NDI	Non-Destructive Inspection
NFA	No Further Action
NFF	North Fuel Farm
NOSSA	Naval Ordnance Safety and Security Activity
NSAP	North-South Apron Plume
OGC	Old Golf Course
O&M	Operation and Maintenance
OPS	Operating Properly and Successfully
ORC	Oxygen Release Compound
OU	Operable Unit
OWS	Oil-Water Separator
PAH	Polynuclear aromatic hydrocarbon
PARM	Post-active remediation monitoring
PCB	Polychlorinated biphenyl
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
PRG	Preliminary Remediation Goal
PSC	Potential Source of Contamination

RA	Remedial Action
RAC	Remedial Action Contractor
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SAOR	Sampling and Analysis Outline Report
SAP	Sampling and Analysis Plan
SAR	Sampling and Analysis Report/Site Assessment Report
SARA	Superfund Amendments and Reauthorization Act/SAR Addendum
SCTL	Soil Cleanup Target Level
SFF	South Fuel Farm
SMP	Site Management Plan
SOW	Scope of Work
SRCO	Site Rehabilitation Completion Report
SRR	Source Removal Report
SVE	Soil vapor extraction
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbons
TRPH	Total recoverable petroleum hydrocarbons
Tetra Tech	Tetra Tech, Inc.
UFP	Uniform Federal Policy
U.S. COE	United States Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
UST	Underground storage tank
UXO	Unexploded Ordnance
VOC	Volatile organic compound
WWTP	Wastewater Treatment Plant

## **1.0 INTRODUCTION**

This Site Management Plan (SMP) Calendar Year (CY) 2013 Second Quarter Update for Former Naval Air Station (NAS) Cecil Field was prepared in accordance with the requirements of the Federal Facility Agreement (FFA) among the United States Environmental Protection Agency (U.S. EPA), the Florida Department of Environmental Protection (FDEP), and the United States Navy. The FFA is an interagency agreement required by Section 120(e)(1) of the Superfund Amendments and Reauthorization Act (SARA) of 1986. Each year or as otherwise agreed to by the FFA parties, the SMP is amended to reflect current information on progress made and future activities. Quarterly progress reports are also required to be submitted to FDEP and U.S. EPA in the FFA. In accordance with the requirements in the FFA, the intent of the SMP Quarterly Progress Report Update is to:

- Identify and briefly describe the actions which the Navy has taken during the previous quarter to implement the requirements of the FFA (Section 2.0).
- Identify and briefly describe the upcoming activities scheduled to be taken during the current quarter (Section 3.0).
- Include a statement of the manner and extent to which the requirements and time schedules set out in the FFA and approved Work Plans are being met.
- Identify any anticipated delays in meeting time schedules, along with the reason(s) for the delays and actions taken to prevent or mitigate the delay.

Information pertaining to the Petroleum [underground storage tank (UST) and above-ground storage tank (AST)] Program is also included to provide an overview of the environmental programs being conducted at Former NAS Cecil Field. NAS Cecil Field was closed in September 1999.

### **1.1 Site Management Strategy**

The SMP provides a schedule of Installation Restoration Program (IRP) activities and is intended to be a dynamic document. The SMP will be amended as warranted and as mutually agreed to by the Navy, U.S. EPA, and FDEP. The principles used in preparing the SMP include: maximizing the utilization of resources, having the flexibility to meet changing and unforeseen conditions, and cleaning up the site in a scientific and expeditious manner. These principles provide the basis for expedited remedial response at Former NAS Cecil Field. Guidance and promulgation offered by the U.S. EPA and FDEP are used to prepare the SMP.

The IRP investigations have been conducted following guidance presented in the Navy/Marine Corps Installation Restoration Manual (February, 1997). Additional guidance as defined in the U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (1988) and the National Oil and Hazardous Substances Pollution Contingency Plan (1990) is followed for project deliverables.

The long-term goal of the SMP is to guide the completion of the investigation and remediation of all sites at Former NAS Cecil Field. To the extent practicable, Base Realignment and Closure (BRAC) issues will be considered during the cleanup process. The Navy has prepared a BRAC Cleanup Plan (BCP) that details ways to accelerate cleanup at the following classifications of sites: IRP, Munitions Response Program (MRP), Petroleum, Resource Conservation and Recovery Act (RCRA)/Hazardous and Solid Waste Amendments (HSWA), asbestos, and other types of sites. The BCP discusses and identifies the Former NAS Cecil Field Partnering Team and their role in the cleanup process, and presents strategies to expedite the investigation and cleanup processes. The Partnering Team was formed to address the numerous issues surrounding base closure, and to enhance environmental decision-making processes at Former NAS Cecil Field, where property has been or will be available for transfer to the community. This team approach is intended to foster partnering; accelerate the cleanup process; and expedite timely, cost-effective, and environmentally responsible disposal and reuse decisions.

The Partnering Team, in cooperation with the city of Jacksonville (COJ) and Jacksonville Aviation Authority (JAA), assesses candidate sites and updates the prioritization plan for site cleanup at Former NAS Cecil Field by considering planned reuse, waste characteristics, potential migration pathways, and potential receptors (human and ecological). The Navy intends to work with the FFA parties utilizing a continual review process to coordinate prioritization of cleanup sites at Former NAS Cecil Field.

## **1.2 Installation Restoration Program**

Brief descriptions and the current investigative status of all the IRP sites and potential sources of contamination (PSCs) identified under the IRP are presented in Table 1-1. The statuses of these sites were updated based on activities conducted or progress made through the 1st Quarter of CY 2013 and anticipated for the 2<sup>nd</sup> Quarter of CY 2013.

### **1.3 Munitions Response Program**

There are three sites at Former NAS Cecil Field under the MRP, coordinated through Naval Ordnance Safety and Security Activity (NOSSA) and the Department of Defense (DoD) Explosives Safety Board (ESB). These MRP sites are being investigated to expedite removal of all unexploded ordnance (UXO), munitions and explosives of concern (MEC), and material documented as safe (MDAS) at Former NAS Cecil Field. Brief descriptions and the current investigative status of these sites where MRP concerns have been identified are presented in Tables 1-1 and 1-2, as applicable. Currently, the following sites are being investigated under the MRP: IRP Site 15 (see Table 1-1); and Building 365 Munitions Response Area (MRA) and Hangar 860 MRA (see Table 1-2).

### **1.4 Petroleum Program**

Although petroleum sites are not required by the FFA to be part of the SMP and Quarterly Progress Updates, they have been included to assist the Partnering Team in planning future activities to expedite petroleum site (UST and AST) cleanup at Former NAS Cecil Field. Brief descriptions and the current investigative status of the identified petroleum-contaminated sites at Former NAS Cecil Field are presented in Tables 1-2. Sites may be added or removed in the future as a result of contamination assessments and BRAC surveys. Currently, the following sites are being investigated and/or monitored under the Petroleum Program: North Fuel Farm (NFF); South Fuel Farm (SFF); Day Tank 1; Jet Engine Test Cell (JETC); BP Wells Site; North-South Apron Plume (NSAP); Ocala Crash Site; Building 46/Tank 46; Building 82/Tank G-82; Building 81/Tanks 81 A, B, and C; Building 271 Tanks; and Hangar 815 Wash Rack. Several other sites that were previously investigated are also included in Table 1-2.

### **1.5 Schedule and Delays**

The requirements and time schedules set out in the FFA and approved Work Plans are being met and are periodically discussed and reviewed with the NAS Cecil Field Partnering Team. Deviations from the schedule are communicated with the Partnering Team when applicable. Delays in meeting time schedules discussed in the FFA and Annual CY SMP will be mentioned in the following sections as required, along with reasons for any delays. Schedule adherence is also discussed.

## **2.0 ACTIVITIES PERFORMED DURING THE PREVIOUS QUARTER**

### **2.1 Field Work**

The following field activities were conducted during the first quarter of CY 2013.

#### **IR Program**

- OU8, Site 3 — long-term groundwater monitoring event, 2nd quarter Year 15
- OU9, Sites 36 & 37 — long-term groundwater monitoring event, 1st semi-annual Year 13
- OU9, Site 57 — long-term groundwater monitoring event, annual Year 10
- OU9, Site 58 — long-term groundwater monitoring event, annual Year 10
- OU9, Site 59 — long-term groundwater monitoring event, 3rd quarter Year 5
- OU10, Site 21 — long-term groundwater monitoring event, 1st semi-annual Year 13

#### **MRP**

- USA Environmental completed field activities at Site 15

#### **Petroleum Program**

- Ocala Crash Site — groundwater monitoring event, 2nd semi-annual Year 8
- North-South Apron Plume — groundwater monitoring event, annual Year 8
- Hangar 815 Wash Rack — groundwater monitoring event, annual Year 5
- JETC — groundwater monitoring event, 1st semi-annual 2013
- Building 271 — groundwater monitoring event, 4th quarter 2012.
- Building 46 — groundwater monitoring event, 1st semi-annual 2013
- Day Tank 1 — groundwater monitoring event, 1st semi-annual 2013
- NFF — groundwater monitoring event, 1st quarter 2013
- SFF — groundwater monitoring event, 1st semi-annual Year 2 (2013)

### **2.2 Deliverables**

The following deliverables were submitted during the first quarter of CY 2013

#### **IR Program**

- OU2, Site 5 — Final Technical Memorandum for Plume Delineation
- OU2, Site 5 — Draft Groundwater Monitoring Report, annual Year 15
- OU2, Site 17 — Draft Groundwater Monitoring Report, annual Year 16
- OU7, Site 16 — Draft Groundwater Monitoring Report, annual Year 14
- OU8, Site 3 — Draft Groundwater Monitoring Report, annual Year 14
- OU9, Site 36&37 — Draft Groundwater Monitoring Report, 2nd Semi-Annual, Year 12

- OU10, Site 21 — Draft Groundwater Monitoring Report, annual Year 12
- OU10, Site 21 — Final Technical Memorandum, DPT Investigation Results
- Final Quarterly Site Management Plan Report (1st Quarter CY13 Report)
- Draft Annual Review of UFP-SAP Tetra Tech IR Sites
- Draft Annual Review of UFP-SAP Basic Ordering Agreement (BOA) IR Sites
- Draft UFP-SAP Resolution Consultants IR Sites 1 & 2, 32, 45, and 59

#### **MRP**

- None.

#### **Petroleum Program**

- BP Wells — Draft 2nd Post Oxygen Release Compound (ORC) injection Sampling Report (December 2012 event)
- North-South Apron Plume — Groundwater Monitoring Report, annual Year 8
- Jet Engine Test Cell — Groundwater Monitoring Report, annual 2012
- Building 46 — Groundwater Monitoring Report, annual 2012
- Day Tank 1 — Groundwater Monitoring Report, annual 2012
- North Fuel Farm — Groundwater Monitoring Report, annual 2012
- Draft UFP-SAP Resolution Consultants Petroleum Sites — North-South Apron, Building 82, Tank G82, BP Wells, Building 815 Wash Rack, Tanks 81 A, B, and C, Ocala Crash Site, and South Fuel Farm

#### **2.3 Meetings**

The following meetings were held during the first quarter of CY 2013:

Partnering Meeting:

February 13-14, 2013

FDEP Pre-application meeting for HSWA CA Permit Renewal:

March 7, 2013

### **3.0 UPCOMING ACTIVITIES SCHEDULED FOR THE CURRENT QUARTER**

#### **3.1 Field Work**

The following field activities are scheduled to be conducted during the second quarter of CY 2013.

##### **IR Program**

- OU1, Sites 1 & 2 — long-term groundwater monitoring event, annual Year 16
- OU8, Site 3 — long-term groundwater monitoring event, 1st quarter Year 15
- OU9, Site 59 — long-term groundwater monitoring event, 2nd semi-annual Year 5
- OU9, Site 59 — Install three down-gradient compliance wells

##### **MRP**

- None.

##### **Petroleum Program**

- Tanks 81 A, B, C — groundwater monitoring event, 2nd semi-annual Year 2
- Tanks 81 A, B, C — Install one down-gradient compliance well
- G-82 Wells — groundwater monitoring event, 2nd semi-annual Year 5
- BP Wells — groundwater monitoring event, 3rd Post ORC injection
- Building 271 — groundwater monitoring event, 2nd quarter 2013
- NFF — groundwater monitoring event, 2nd quarter 2013

#### **3.2 Deliverables**

The following deliverables are scheduled to be submitted during the second quarter of CY 2012.

##### **IR Program**

- OU1, Sites 1 & 2 — Final Groundwater Monitoring Report, annual Year 15
- OU, Site 3 — Draft Systems Installation Completion Report
- OU9, Sites 36 & 37 — Final Groundwater Monitoring Report, 1st semi-annual Year 10
- OU9, Sites 36 & 37 — Final Groundwater Monitoring Report, 2nd semi-annual Year 10
- OU9, Sites 36 & 37 — Final Groundwater Monitoring Report, 1st semi-annual Year 11
- OU9, Sites 36 & 37 — Final Groundwater Monitoring Report, 2nd semi-annual Year 11
- OU9, Sites 36 & 37 — Final Groundwater Monitoring Report, 1st semi-annual Year 12
- OU9, Site 57 — Draft Groundwater Monitoring Report, annual Year 10
- OU9, Site 58 — Draft Groundwater Monitoring Report, annual Year 10
- OU9, Site 59 — Final Groundwater Monitoring Report, annual Year 3
- OU9, Site 59 — Draft Groundwater Monitoring Report, 1st semi-annual Year 5

- OU11, Site 45 — Final Groundwater Monitoring Report, annual Year 10
- OU11, Site 45 — Final Groundwater Monitoring Report, annual Year 11
- Final Quarterly Site Management Plan Report (2nd Quarter CY13 Report)

#### **MRP**

- OU5, Site 15, Finding of Suitability to Transfer
- OU5, Site 15 Munitions Removal Completion Report
- OU5, Site 15 Land Use Control Remedial Design, rev. 1

#### **Petroleum Program**

- Hangar 815 Wash Rack — Groundwater Monitoring Report, annual Year 5
- Building 271 — Groundwater Monitoring Report, annual 2012
- North Fuel Farm — Groundwater Monitoring Report, annual 2012
- South Fuel Farm — Groundwater Monitoring Report for Year 2, 1st semi-annual sampling event.
- Draft Annual Review of UFP-SAP Tetra Tech Petroleum Sites
- Draft Annual Review of UFP-SAP BOA Petroleum Sites

#### **3.3 Meetings**

The following meetings are scheduled to be held during the second quarter of CY 2013:

Partnering Meeting: May 13-14, 2013

#### **3.4 Schedule Adherence**

The Navy has primary responsibility for developing and implementing the SMP, and for administration and schedule adherence of the NAS Cecil Field Remedial Investigation (RI) and Feasibility Study (FS) program through execution of the Department of Defense IR Program. The following information has been provided to the NAS Cecil Field partnering team and the regulatory agencies concerning schedule adherence during the second quarter of CY 2013 (April 1, 2013, to June 30, 2013).

The following changes to the schedule presented in the SMP for CY 2013 and previous quarterly updates are anticipated at this time:

## **IR Program**

- The schedules for the submission of the Annual Update – Sites 1 and 2, 32, 36 and 37, 45, and 59 final Uniform Federal Policy (UFP) - Sampling and Analysis Plan (SAP) for Long Term Monitoring (LTM) at IR Sites and the Annual Update – UFP - SAP for LTM at IR Sites 3, 5, 16, 17, 21, 57, and 58 have been extended to incorporate various changes to the sampling programs and the schedules were altered with the new Comprehensive Long-Term Environmental Action Navy (CLEAN) contractor taking on the SAP for sites sampled by the CLEAN contractor.
- The schedule for the submission of the final Site 16 Year 14 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for the submission of the final Site 5 Year 15 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for the submission of the final Site 21 Year 12 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for the submission of the final Site 3 Year 14 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for submission of the Final Site 45 Year 10 Annual Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for the submission of the final Site 17 Year 16 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.
- The schedule for the submission of the final Sites 36 and 37 Year 12 Groundwater Monitoring Report has been extended due to an extended period required to complete the final document and the need for appropriate time in regulatory review.



The following changes to the schedule presented in the SMP for CY 2013 and previous quarterly updates are anticipated at this time:

**Petroleum Program**

The schedules for the submission of the following have been extended: Annual Update – UFP-SAP for Petroleum Sites: JETC, NFF, Day Tank 1, Building 46, and Building 271 and Annual Update – UFP-SAP for Petroleum Sites: NSAP; Building 82, Tank G82; BP Wells; and 815 Wash Rack, with the addition of Tanks 81 A, B, and C. These submissions have been extended to incorporate various changes to the sampling programs and the schedules were altered with the new CLEAN contractor taking on the SAP for sites sampled by the CLEAN contractor.

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
1	OU 1	Old Landfill (9 acres)	1950s-1965	Solid waste, oils, fuels, paints, paint stripper, solvents, municipal solid waste	Municipal solid waste, industrial operations. Trench and fill landfill for commercial and residential wastes (solid and liquid).	Complete closure of the landfills in accordance with state and federal ARARs for landfill closure; Remove and prevent transport and accumulation of the orange-red flocculant material from the Site 2 tributary if biomonitoring shows the materials to be harmful to the benthic macroinvertebrate community of Rowell Creek; Reduce unacceptable exposure of ecological receptors to metals (cyanide, nickel, cadmium, mercury, selenium, silver and vanadium) in sediments; Reduce unacceptable aquatic receptor responses to iron, lead, and aluminum in the Site 2 tributary surface water.
	<ul style="list-style-type: none"> <li>• The Record of Decision (ROD) was signed in September 1995. The selected remedial alternative, site closure, included landfill gas, radiological and unexploded ordnance (UXO) surveys, surface debris removal, groundwater monitoring, post-closure care, and a 5-year review.</li> <li>• The final design was submitted in April 1996. Bechtel and the Navy conducted an unexploded ordnance survey in 1997, and Bechtel completed a radiological survey in 1998.</li> <li>• An Explanation of Significant Differences (ESD) was signed in November 2003 to provide enforceable Land Use Control (LUC) provisions that were to become part of the ROD.</li> <li>• A final LUC Remedial Design (RD) was submitted on March 29, 2005, and approved by the United States Environmental Protection Agency (U.S. EPA) on April 15, 2005.</li> <li>• A final Operating Properly and Successfully (OPS) Demonstration Report was submitted on April 21, 2005, and approved by U.S. EPA on June 16, 2005, and by Florida Department of Environmental Protection (FDEP) on May 20, 2005.</li> </ul> <p>On May 5, 2011, MK-76 practice bombs were identified in the creek within Sites 1 and 2. The Mayport Explosives Ordnance Disposal responded and removed the munitions and explosives of concern (MEC) items. A site walk by unexploded ordnance personnel to verify that no more MEC is identified was conducted the week of August 15 through August 19, 2011. A Technical Memorandum was prepared and submitted on December 28, 2011, presenting the findings of the site walk.</p> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual monitoring is ongoing. The Year 16 annual sampling event is scheduled for April 2013. The third 5 Year Review recommended reviewing the sampling program to determine if it could be curtailed due to no signs of any releases for three or more years.</li> <li>• Site 1 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
2	OU 1	Recent Landfill (5 acres)	1965-1975	Solid waste, oils, fuels, paints, paint stripper, solvents	Industrial operations and shops. Trench and fill landfill for commercial and residential wastes (solid and liquid).	Complete closure of the landfills in accordance with state and federal ARARs for landfill closure; Remove and prevent transport and accumulation of the orange-red flocculant material from the Site 2 tributary if biomonitoring shows the materials to be harmful to the benthic macroinvertebrate community of Rowell Creek; Reduce unacceptable exposure of ecological receptors to metals (cyanide, nickel, cadmium, mercury, selenium, silver and vanadium) in sediments; Reduce unacceptable aquatic receptor responses to iron, lead, and aluminum in the Site 2 tributary surface water.
	<ul style="list-style-type: none"> <li>• The ROD was signed in September 1995. The selected remedial alternative included site closure and biomonitoring in the wetland area.</li> <li>• The Final design was submitted in April 1996. Bechtel and the Navy conducted an unexploded ordnance survey in 1997 and Bechtel completed a radiological survey in 1998.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A final OPS Demonstration Report was submitted on April 21, 2005, and approved by U.S. EPA on June 16, 2005, and FDEP on May 20, 2005.</li> </ul> <p>On May 5, 2011, MK-76 practice bombs were identified in the creek within Sites 1 and 2. The Mayport Explosives Ordnance Disposal responded and removed the MEC items. A site walk by unexploded ordnance personnel to verify that no more MEC is identified was conducted the week of August 15 through August 19, 2011. A Technical Memorandum was prepared and submitted on December 28, 2011, presenting the findings of the site walk.</p> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual monitoring is ongoing. The Year 16 annual sampling event is scheduled for April 2013. The third 5 Year Review recommended reviewing the sampling program to determine if it could be curtailed due to no signs of any releases for three or more years. Site 2 will be included in the 4th Five Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
3	OU 8	Oil/Sludge Disposal Pit (50-100 ft in diameter and 3-5 ft deep)	1950s-1975	Waste fuels, oils, paints, paint strippers, solvents	Fuel farm, Aircraft Intermediate Maintenance Division (AIMD), squadrons, public works shops; waste was placed in at least four shallow pits. Groundwater was the only medium identified in the baseline risk assessment (BRA) as having an unacceptable human health risk. No ecological risk was identified for any medium.	Prevent exposure to groundwater that contains VOCs at concentrations that are greater than the State of Florida guidance criteria and that cause unacceptable risk to human health.
	<ul style="list-style-type: none"> <li>• The ROD was signed in September 1998.</li> <li>• The final groundwater RD was submitted in October 1998 and identified air sparging (AS) of the source, natural attenuation monitoring of the plume, LUCs to prevent use of groundwater, and 5-year reviews.</li> <li>• AS system began operation in late May 1999, and the system was shut down in May 2000. The AS system was restarted in December 22, 2000, and then shut down in February 2001.</li> <li>• An Interim Remedial Action (IRA) report was submitted in June 2001.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A final LUC RD was submitted on April 21, 2005, and approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005. A final OPS Demonstration Report was submitted on April 22, 2005, and approved by U.S. EPA on June 16, 2005, and FDEP on April 14, 2005.</li> <li>• The solar-powered air sparge system was started up in November 2012 and sampling was conducted in December 2012 for analysis after one month of operation.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The third 5 year review recommended that an ESD or other appropriate decision document be prepared to clearly define COCs and RAOs. Also, it recommended that due to increasing concentrations in CEF-003-31S and CEF-003-WP should be closely monitored during upcoming events and further action should be considered if exceedances continue. Due date is September 20, 2016. The increasing concentration in CEF-003-31S and CEF-003-WP are being addressed by the solar-powered air sparge system.</li> <li>• Site 3 will be included in the 4th Five-Year Review, due September 1, 2016.</li> <li>• Because of migration of the groundwater plume in the Source Area, further assessment is being conducted as well as a solar air sparging treatability study.</li> <li>• Annual sampling is continuing, with the next event planned for September 2013.</li> <li>• Quarterly sampling is continuing in the creek area only, with the next sampling event planned for June 2013.</li> </ul>					
4	--	Grease Pits (9 acres)	1950s-1983	Waste oils, mess greases	Multiple shallow pits which received liquid wastes from installation dining facilities and facility oil/water separators.	No RAOs
	<ul style="list-style-type: none"> <li>• Field investigation work plan was submitted in March 1995. Field screening activities (including surface and subsurface soil sampling and monitoring well installation) were completed in June 1997. Groundwater sampling was completed in August 1997.</li> <li>• The final Technical Memorandum for no further action (NFA) was submitted in September 1998.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
5	OU 2	Oil Disposal Area Northwest (100 ft in diameter)	1950s	Oil, fuel	Shallow, unlined pit that received liquid wastes from the fuel farms.	Protect humans from exposure from potable water use of groundwater at Site 5 that contains concentrations of VOCs, SVOCs, pesticides, and inorganics above drinking-water-based ARARs or risk assessment remedial goal options; protect ecological receptors from exposure to sediment that contains concentrations of PCBs above guidance concentrations and TRPH that are demonstrated to pose a toxic effect at Site 5.
	<p><b>Interim Action:</b> An Interim ROD was signed in September 1994 with RAOs: Clean up contamination in the unsaturated soil above the water table to reduce the source of contaminants to groundwater; Remove free product to reduce the source of contamination to groundwater; and Clean up contaminated surface soil to reduce health risks from direct contact exposure. An IRA was initiated in March 1995 for source removal. The IRA included removal and disposal of free petroleum product and removal and treatment of contaminated soil using bioremediation. Per BCT recommendation, the IRA (bioremediation) activities were discontinued in June 1996. Remedial Action (RA) reports were submitted in May 1995.</p> <ul style="list-style-type: none"> <li>• Final ROD was signed September 1995. Due to discontinuation of the IRA, the ROD was amended and issued in January 2000.</li> <li>• The RAs for soil and sediment were initiated in April 1998. The final groundwater RD for AS was submitted in May 1998.</li> <li>• The final IRA and Year 3 Groundwater Report were submitted in March 2002</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A final LUC RD was submitted on May 5, 2006, and approved by U.S. EPA on May 9, 2006, and FDEP on May 12, 2006.</li> <li>• A final OPS Demonstration Report was submitted on July 28, 2006.</li> <li>• Monitoring frequency was reduced to annual at the November 2007 BCT meeting.</li> <li>• Thirteen new well locations were selected to be installed and added to the LTM program based on the DPT sampling results. One well was installed in August 2012 (CEF-005-31S). The BCT decided at the August 2012 BCT meeting to wait to install the other two wells in the eastern portion of the site, pending a decision on the spoils pile from the Lake Fretwell expansion that is slumping onto Site 5.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The third 5 year report recommended that an ESD or other appropriate decision document clearly define the site COCs and RAOs; it also recommended that due to increasing concentrations at CEF-005-LTM01, the well should be closely monitored, and further actions considered if exceedances continue. Due date September 20, 2016.</li> <li>• Site 5 will be included in the 4<sup>th</sup> Five-Year Review, due September 1, 2016.</li> <li>• The expansion of Lake Fretwell was conducted near the site, and the dredged material was piled next to the site and in the other areas. The spoils are currently slumping on to the site. Contact has been made with the St. Johns River Water Management District and the BCT plans to discuss how to best proceed.</li> <li>• Annual sampling is continuing, and the next event is scheduled for September 2013.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
6		Lake Fretwell Rubble Disposal Area (3.5 acres)	1950s-1984	Inert rubble	Concrete/asphalt from demolition of runway, construction debris, lumber, scrap metal, cut foliage. Rubble was disposed along banks of a low-lying marsh area by public works; some of the rubble has been overlain with soil and sod; additional rubble is uncovered.	NA
	<ul style="list-style-type: none"> <li>A Field Investigation Plan was submitted in March 1995. Field screening activities (geophysical surveys, monitoring well installation, surface and subsurface soil sampling, surface water and sediment sampling) were conducted in June 1997. Groundwater sampling was completed in August 1997.</li> <li>The draft Technical Memorandum presenting investigation findings was submitted in May 1998. However, the BCT decided that additional sampling was required. Three additional soil sampling events were conducted between April and July 1999 to delineate soil contaminated with arsenic, TRPH, and benzo(a)pyrene.</li> <li>A dig and haul package was completed in August 1999. The Navy excavated and disposed of the contaminated soil in August 1999.</li> <li>The final Technical Memorandum for NFA was issued in July 2000.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
7	OU 3	Old Fire Fighting Training Area (1/3 acre)	1950s-1975	Waste fuels, oil, solvents, paint, paint strippers	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for firefighting training. Wastes received from fuel farms, AIMD, squadrons, and public works shops.	Prevent exposure to contaminants that pose an unacceptable human health risk and are present at concentrations exceeding the Florida soil cleanup goal for industrial sites. Prevent exposure to groundwater that contains benzene at concentrations greater than the FDEP GCTL.
	<ul style="list-style-type: none"> <li>The ROD was signed in February 1999.</li> <li>A draft soil and groundwater design package was submitted in May 1998. In September 1998, surface soil sampling in support of the RA was conducted to further delineate TRPH, polynuclear aromatic hydrocarbons (PAHs), and inorganic contamination. The RA for soil was conducted in December 1998 and the Construction Completion Report indicated NFA for the soil.</li> <li>The groundwater portion of the design package was implemented in August 1998 and consists of annual groundwater monitoring.</li> <li>An AS pilot test was conducted at Well 8S in April 2001 after the quarterly sampling event.</li> <li>Final RA Completion Report (RACR) recommending NFA was submitted on September 15, 2003, and was approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
8	OU 3	Boresite Range/ Hazardous Waste Storage Area/Fire Fighting Training (6 acres)	1975-1984	Waste fuels, oil, solvents, paint, paint strippers, lead	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for firefighting training. Boresite range was used for machine gun and small arms practice. 55-gallon drums of waste were stored at the site and used as targets for practice. Wastes received from fuel farms, AIMD, squadrons, and public works shops.	Prevent exposure to groundwater at Site 8 that contains VOC and SVOCs at concentrations greater than the State of Florida groundwater cleanup target levels and that causes unacceptable risk to human health.
9		Recent Grease Pits (0.5 acre)	1983-1984	Grease mixed with water	Installation messes; three shallow pits were used to dispose of kitchen grease; each pit was used until full and then a new pit was excavated.	NA

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
10	OU 4	Rubble Disposal Area (6.5 acres)	1950s-1960s	Inert Rubble	Surface disposal area received building demolition debris, runway debris, and metal.	NA
	<ul style="list-style-type: none"> <li>The final Remedial Investigation (RI) report was submitted in November 1996. The RI report presented an NFA recommendation with a proposal to prepare an NFA ROD. The Proposed Plan (PP) was submitted in July 1997. Final ROD was signed in September 1997.</li> <li>One detection of arsenic was observed greater than its background criterion, and in December 1998, soil sampling was conducted to delineate this area. A dig and haul package was submitted, and soil excavation and disposal related to arsenic contamination were completed in August 1999.</li> <li>An ESD was prepared in June 1999. The RA Report was issued in April 2000 and recommended NFA for the soil. The RA Report and the NFA recommendation were approved by EPA on June 05, 2000, and FDEP on May 15, 2000.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
11	OU 6	Golf Course Pesticide Disposal Area	1970s-1978	Pesticide, fungicide, and herbicide containers, vehicles, metal debris	Golf course maintenance area, which was used as a burial area for between 200 and 400 empty 5-gallon cans that had contained pesticides. A limited number of full containers of pesticides were buried in 1978.	Reduce human health risk associated with exposure to surface soil containing arsenic concentrations in excess of the site-specific background concentration (referred to as Hi-Cut value) of 2.1 milligrams per kilogram. Reduce human health risk associated with exposure to subsurface soil containing arsenic in excess of the FDEP brownfield site cleanup criterion of 29 mg/kg and DBCP in excess of its practical detection limit of 0.2 micrograms per kilogram (µg/kg). Reduce human health risk associated with exposure to groundwater containing DBCP and phenol in excess of their respective risk-based cleanup goals of 0.2 and 10 micrograms per liter (µg/L).
	<p><b>Interim Actions:</b></p> <ul style="list-style-type: none"> <li>An Interim ROD was signed in August 1994. The IRA was completed in January 1996. The RACR was submitted on October 18, 1996.</li> <li>The final ROD was signed in September 1998. The draft design for soil treatment was submitted in August 1998. A soil removal in accordance with the final RA occurred in December 1998. During the removal action, pesticide containers were discovered and disposed accordingly. A geophysical investigation was conducted in February 1999 to assess whether additional buried containers remained on site. Based on the anomalies found during this investigation, test pitting was conducted in the second quarter of FY 2000 (January to March 2000). A Soil RA Report Addendum was issued in August 2000 and indicated NFA for soil.</li> <li>The RD for groundwater was submitted in November 1998.</li> <li>The baseline groundwater sampling event was conducted in December 1998. The annual summary report for the Year 1 Quarterly Monitoring Program was completed in November 1999. Recommendations included reducing monitoring to semi-annual events.</li> <li>A final IRA report was completed in August 2002. A site close-out sampling event was conducted in October 2002, and the results of that sampling indicated that target cleanup levels were being met.</li> <li>A Final RA and Year 4 Annual Groundwater Monitoring Report recommending NFA at this site was submitted in June 2003 and approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					



Table 1-1 Installation Restoration Program						
Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
12		Public Works Rubble Disposal Area (0.5 acre)	1970s-1984	Inert rubble, lumber, concrete, wire, cable, scrap metal, drums	Public works rubble was disposed on site. Majority of rubble was buried approximately 3 feet below land surface, some rubble is above ground.	NA
	<ul style="list-style-type: none"> <li>• Field investigation work plan was submitted March 1995.</li> <li>• Field screening activities (geophysical survey, hydrological assessment, monitoring well installation, surface and subsurface soil sampling, groundwater sampling and surface water and sediment sampling) were completed in August 1997.</li> <li>• The Technical Memorandum for NFA was submitted in September 1998 and regulatory concurrence was received in October 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					
13		Day Tank 1-Fuel Spill (1.5 acres)	1981	JP-5 fuel	Day tank containing JP-5 fuel spilled in 1981. Approximately 500,000 gallons of JP-5 fuel were spilled; approximately 250,000 gallons were recovered.	NA
	Transferred to the petroleum program.					
14	OU 5	Blue 5 Ordnance Disposal Area (4.5 acres)	1967-1977	Fuses, 100-pound bombs, large munitions, lulu fuses, other explosive materials	Installation ordnance disposal operations by open detonation or burning.	NA
	<ul style="list-style-type: none"> <li>• The final RI report was submitted in October 1997.</li> <li>• The final Feasibility Study (FS) report and the PP were submitted in March 1998.</li> <li>• The ROD, which selected the NFA remedy, was signed in July 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
15	OU 5	Blue 10 Ordnance Disposal Area (10 acres)	1960s-1977	Small arms, parachute/distress flares, Mark IV signal cartridges, rocket igniters, CADS, 5- and 2.75-inch rockets	Installation ordnance disposal operations by combustion in a chamber, with ashes being spread over the site.	Prevent unacceptable human health risk associated with exposure to Site 15 surface soil containing BaPEqs, arsenic, lead, and TRPH at concentrations greater than the established site-specific SCTLs. Reduce ecological risk associated with exposure to Site 15 surface soil containing BaPEqs, arsenic, and lead at concentrations greater than the established site-specific ecological target levels.
<ul style="list-style-type: none"> <li>• The final FS was submitted in March 1998. An ecological study was conducted in September 1998. Additional sampling was conducted in 1999 to fill in data gaps for lead and PAH contamination.</li> <li>• A final Technical Memorandum for NFA for groundwater (no additional monitoring) at Site 15 was submitted in August 2001 and monitoring wells were abandoned. However, an FDEP rule change lowered the GCTL for arsenic from 50 parts per billion (ppb) to 10 ppb; therefore, the previous arsenic detection of 13.7 ppb exceeded the revised GCTL and Maximum Contaminant Level (MCL). Various rounds of groundwater sampling were conducted to evaluate arsenic exceedances and associated high turbidities.</li> <li>• A final FS was submitted in December 2006 and presented alternatives for remediation of soil and groundwater.</li> <li>• A revised Final FS was submitted in April 2007, indicating that groundwater was not a medium of concern. The revised draft ROD was submitted in June 2007.</li> <li>• Preliminary pre-excavation sampling in August 2007 resulted in significant revisions to the amount of lead-contaminated soil that would require disposal as hazardous waste and to the associated costs. Changes necessitated preparation of an Amended FS and revised ROD. Final Amended FS was submitted on April 30, 2008. The ROD was signed in June 2008.</li> <li>• The final LUC RD was submitted in August 2008, and the final RD was submitted in June 2008.</li> <li>• Excavation activities were conducted from July 7 to December 31, 2008, and a Construction Completion Report documenting the excavation activities was submitted in August 2009. Munitions concerns were identified during the excavation activities, and a cleaning was conducted in areas to be excavated.</li> <li>• The Final RACR was submitted October 7, 2011, documenting the completion of all events required by the ROD.</li> </ul> <p><b>Munitions Response Program Activities:</b></p> <ul style="list-style-type: none"> <li>• A Uniform Federal Policy (UFP)-SAP was prepared to address the Munitions Response Program (MRP) MEC RI, and submitted as a final document April 16, 2010. The FDEP and U.S. EPA approved the UFP-SAP.</li> <li>• A draft RI Report for Munitions Response was submitted August 4, 2010, and presented at the August 2010 BCT meeting based on the sampling described in the UFP-SAP. No regulatory comments were received and the final version of this report was submitted on January 12, 2011.</li> <li>• A final UFP-SAP was submitted on April 29, 2011, for the MRP MEC Supplemental RI. Field activities related to the MEC Supplemental RI were conducted in May and June 2011. The results of the Supplemental RI were presented at the August 2011 BCT meeting, and the Final Supplemental RI report was prepared and submitted on December 2, 2011.</li> <li>• A Final FS for Munitions Removal was submitted in July 31, 2012.</li> <li>• A Non-Time-Critical Removal Action Memorandum was prepared to detail the field activities required to address the MEC present at Site 15. The Action Memorandum was submitted as final on August 1, 2012.</li> <li>• Field activities were completed by USA Environmental in March 2013.</li> <li>• A draft Interim Remedial Action Completion Report was submitted by USA Environmental on April 18, 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• A FOST is being prepared that will allow for the property to be transferred and used as a low-intensity recreational area.</li> <li>• Site 15 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>						



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
16	OU 7	AIMD Seepage Pit (40x3x10 ft)	1960-1980	Solvents, heavy metals, acids, blasting grit, paint residue, photo wastes	Building 313, jet engine maintenance shop, utilized a seepage pit to drain wastewater (containing solvents, paint, grease, metals) into area soils. Holding tank for wastewater is also located at Site 16; glass bead separator and associated piping also present.	Prevent exposure to groundwater that contains chlorinated VOCs at concentrations that are greater than the State of Florida GCTLs which includes the State and Federal drinking water standards and that cause unacceptable risk to human health.
	<p><b>Interim Remedial Action:</b></p> <ul style="list-style-type: none"> <li>• Focused FS and RD for the removal of holding tank and impacted soils were issued. Final responsiveness summary and Interim ROD were submitted in March 1994. The removal and closure of the Non-Destructive Inspection (NDI) Holding Tank were completed in June 1994. Final NDI Holding Tank Closure Certification and Report was submitted in September 1994.</li> <li>• The ROD was signed and submitted in August 1996. The RD for Site 16 was revised and consisted of RAs proposed for the source area and storm sewer system as identified below. An Amended ROD was signed in April 1999.</li> </ul> <p><b>Storm Sewer System:</b></p> <ul style="list-style-type: none"> <li>• A pilot-scale treatability study work plan for the storm sewer system was submitted in April 1998. The pilot study for the storm sewer system was completed in April/May 1998 and a pilot-scale treatability study report was submitted in June 1998.</li> <li>• The draft Storm Sewer RD was submitted in August 1998. A storm sewer investigation was conducted in August 1998 to evaluate the remaining portions of the storm sewer system near Site 16. The storm sewer system was repaired in June 1999.</li> </ul> <p><b>Source Area:</b></p> <ul style="list-style-type: none"> <li>• A decision was made based on new information to revise the RA to AS of the source and natural attenuation of the plume in the Amended ROD.</li> <li>• The AS/SVE system installation was completed in June 1999, the operation of the system began in late June 1999, and the system was shut down in May 2000.</li> <li>• The AS/SVE system was restarted on December 22, 2000, and shut down in February 2001.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• A final LUC RD was submitted on April 21, 2005, and was approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005.</li> <li>• A final OPS Demonstration Report was submitted on April 22, 2005, and was approved by U.S. EPA on June 16, 2005 and FDEP on May 18, 2005.</li> <li>• The AS/SVE system was restarted on April 16, 2009, after a direct-push technology (DPT) investigation was completed to verify that the hot spot area continued to be within the AS/SVE system limits. The AS/SVE system operated prior to the September 2009 event, and was then shut down.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• The third 5 year review recommended that an ESD or other appropriate decision document be prepared to clearly define COCs and RAOs. Annual sampling is continuing, and the next sampling event is scheduled for September 2013.</li> <li>• Site 16 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



Table 1-1 Installation Restoration Program						
Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
17	OU 2	Oil/Sludge Disposal Pit Southwest (2 acres)	Late 1960s - early 1970s	Waste fuels/oils	Unlined shallow disposal pit received wastes from fuel farms.	Protect human health from potable water use of groundwater at Sites 5 and 17 that contains concentrations of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and inorganics above drinking water-based applicable or relevant and appropriate requirements (ARARs) or risk assessment RAOs.
	<p><b>Interim Remedial Action:</b></p> <ul style="list-style-type: none"> <li>An Interim ROD was signed in September 1994. An IRA was initiated in February 1995 for source removal and onsite treatment of contaminated soil. A RACR was submitted in September 1996.</li> <li>The final ROD was signed in September 1995. The remedial alternative is intrinsic bioremediation with an aggressive monitoring program. The final RD work plan was submitted in January 1997.</li> <li>An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>A final LUC RD was submitted on April 21, 2005, and was approved by U.S. EPA on June 1, 2005, and FDEP on May 18, 2005.</li> <li>A final OPS Demonstration Report was submitted on April 22, 2005, and was approved by U.S. EPA on June 16, 2005, and FDEP on May 18, 2005.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The third five-year review recommended that an ESD or other appropriate decision document be prepared to clearly define COCs and RAOs. Annual monitoring is ongoing, and the next event is scheduled for September 2013.</li> <li>Site 17 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					
18		Ammunition Disposal Area (0.1 acre)	1940s – 1950	Ammunition crates, miscellaneous ordnance	Waste material from a nearby magazine area was trucked in and dumped over the site during the 1940s until 1950. Reportedly, all munitions were removed.	NA
	<ul style="list-style-type: none"> <li>Field investigation work plan was submitted in March 1995. Field screening activities (monitoring well installation, surface and subsurface soil, surface water, and sediment sampling) were completed in August 1997.</li> <li>The draft Technical Memorandum for NFA was submitted in March 1998. The final Technical Memorandum for NFA was submitted in October 1998 and approved by EPA on November 30, 1998, and approved by FDEP on December 2, 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
19		Rowell Creek Rubble Disposal Area (3 acres)	Section until 1991	Concrete, construction debris, asphalt, wood debris, trash	Construction and operations disposal; there is limited information on disposal practices	NA
	<ul style="list-style-type: none"> <li>Field investigation work plan was submitted in March 1995. Field screening activities (records and document search, geophysical surveys, monitoring well installation, surface and subsurface soil, surface water and sediment sampling) were completed in August 1997.</li> <li>The Technical Memorandum for NFA was submitted in November 1998, and approved on December 10, 1998, by EPA and on January 15, 1999, by FDEP.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>					
21	OU 10	Golf Course Pesticide Mixing Area	1950s to present	Pesticides, TRPH, and arsenic	Site activities included the storage and maintenance of golf course maintenance equipment, cleaning and rinsing of chemical-dispensing equipment, and preparation of chemical solutions. Empty containers at one time were disposed in a pile on the northwest side of the site. Rinsing took place at one of two places: on the east side of Building 238, and on a concrete pad on the north side of the site. At both locations, rinse water discharged into the ditch along the east side of the site.	Prevent unacceptable risk from exposure to soil with concentrations of arsenic greater than the background value. Prevent unacceptable risk from ingestion of groundwater with concentrations of chlordane greater than the FDEP GCTL and the federal Maximum Contaminant Level (MCL). Reduce concentrations of chlordane in groundwater to less than the FDEP GCTL and federal MCL.
	<ul style="list-style-type: none"> <li>Soil contamination was delineated and a final Action Memorandum for soil removal to meet industrial criteria was issued in April 2001. The soil RA was completed in June 2001.</li> <li>A draft Action Memorandum Addendum for removal of soil to risk levels was submitted in May 2002, and the RA was completed in September 2002. The RI was submitted in October 2001, and the final FS was submitted in September 2002. A final revised FS reflecting industrial land use was submitted in October 2003, and a revised final PP was submitted in early July 2005. A revised final ROD reflecting finalized LUC language was signed in September 2005.</li> <li>A work plan for long-term groundwater monitoring was submitted in June 2002, and monitoring began in July 2002.</li> <li>A final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 8, 2006, and FDEP on May 15, 2006.</li> <li>A final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on July 31, 2006.</li> <li>A final Interim RA report was submitted on October 13, 2006, and was approved by U.S. EPA on October 31, 2006, and FDEP on January 3, 2007.</li> <li>Soil and groundwater sampling was conducted in April 2012. The results showed no exceedances of total chlordane in the soil or groundwater. The newly installed replacement well was used in the September 2012 annual event.</li> <li>The replacement wells were resampled in October 2012 per FDEP recommendation.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Site 21 will be included in the 4th Five-Year Review, due September 1, 2016.</li> <li>Annual monitoring is ongoing. The next event is scheduled for September 2013.</li> </ul>					

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
25	OU 10	Former Transformer Storage Yard	1953 to 1999	Pesticides, polychlorinated biphenyls (PCBs), and benzo(a)pyrene	Limited information on practices. Site activities included the storage of pesticides and old transformers, operation of the wash rack, and service of equipment.	Prevent ingestion of groundwater with alpha- and beta-BHC concentrations greater than their respective cleanup goals of 0.006 microgram per liter (µg/L) and 0.02 µg/L, which are the FDEP Groundwater Cleanup Target Levels (GCTLs). Reduce concentrations of alpha- and beta-BHC in groundwater to less than FDEP GCTLs.
						<ul style="list-style-type: none"> <li>The soil contamination was delineated and a final Action Memorandum for soil removal was issued in April 2001. A soil RA was completed during May 2001.</li> <li>The RI and FS reports were submitted in October 2001.</li> <li>A work plan for long-term groundwater monitoring was submitted in June 2002, and sampling began in July 2002. The final ROD was signed in September 2004.</li> <li>A final Interim RA report was issued on September 14, 2005, and was approved by U.S. EPA on November 3, 2005 and FDEP on October 14, 2005.</li> <li>A final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 15, 2006.</li> <li>A final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on September 13, 2006, and FDEP on July 31, 2006.</li> <li>Groundwater concentrations were less than cleanup goals for two consecutive sampling events, and the draft RACR was submitted on May 15, 2008. Regulatory comments were received, and the final RACR was approved by U.S. EPA February 3, 2009, and by FDEP December 16, 2008. NFA is required at Site 25.</li> <li>Site 25 was included in the 3rd Five-Year Review and documented as requiring No Further Action. It is, therefore, not required to be included in the 4th Five-Year Review.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>
32	OU 12	Defense Reutilization and Marketing Office (DRMO) Asphalt Storage Yard		PAHs and metals	Site was used for unpermitted storage of hazardous materials in drums.	Prevent unacceptable risk from exposure to soil with concentrations of PAHs greater than FDEP residential SCTLs and concentrations of inorganics greater than FDEP residential SCTLs and/or IBDS values. Address the potential risk of migration of organic and inorganic contamination from soil to groundwater from soils with concentrations that exceed FDEP SCTLs for leachability.
						<ul style="list-style-type: none"> <li>A Sampling and Analysis Report (SAR), issued in 1996, indicated that metals detected in surface soil at the site may represent a hazard. Field investigations were conducted between May 1999 and April 2000 to delineate soil contamination.</li> <li>A final Action Memorandum for soil removal was prepared in May 2000, and 140 tons of soil were excavated and disposed in August 2000. Because contaminated soil remains at the site beneath a paved storage area, an Engineering Evaluation/Cost Analysis (EE/CA) was prepared and submitted in August 2002. The EE/CA recommended groundwater monitoring with LUCs as the preferred RA alternative at the site.</li> <li>The final ROD was signed in October 2004.</li> <li>A final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 15, 2006.</li> <li>A final OPS Demonstration Report was submitted on July 28, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on July 31, 2006.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Groundwater sampling to verify that contaminants are not leaching from soil is to be conducted every 5 years per the ROD.</li> <li>The next sampling event will take place in May 2014.</li> <li>Site 32 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
36	OU 9	Control Tower TCE Plume		Chlorinated solvent, benzene, toluene, ethylbenzene, and xylene (BTEX) plume.	The plume was discovered during the Day Tank 2 groundwater plume investigation. The plume's major contaminants are TCE and BTEX. The groundwater plume is located south of Building 82, the control tower.	Prevent unacceptable risks from human exposure to contaminated groundwater at Sites 36 and 37; Prevent contaminant migration from groundwater to surface water at Site 36; Restore surficial aquifer quality at Sites 36 and 37 to meet Preliminary Remediation Goals (PRGs).
	<ul style="list-style-type: none"> <li>• The RI Report was completed in August 1999.</li> <li>• The remediation of Day Tank 2 groundwater contamination is included in the Site 36 groundwater remediation. The FS and PP were issued in September 2000.</li> <li>• The ROD was signed in June 2001.</li> <li>• The final RD for the AS system was submitted in September 2001, and the RA construction began in December 2001. The AS system began operation at one hot spot in March 2002. The construction for the entire system was completed in July 2002. Also, a long-term monitoring (LTM) plan for groundwater was submitted in January 2001 and monitoring began in the same month.</li> <li>• An ESD was signed in November 2003 to provide enforceable LUC provisions that were to become part of the ROD.</li> <li>• The final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on June 29, 2006.</li> <li>• A final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006. The Year 5 final annual monitoring report was submitted on June 1, 2007, and recommended that the AS system at Hot Spot 2 be shut down.</li> <li>• The Year 12, 2nd Semi-annual event was conducted in September 2012 and evaluated the source area only.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Semi-annual sampling is continuing. The next sampling event is scheduled for September 2013.</li> <li>• Site 36 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
37	OU 9	Hangars 13 and 14 dichloroethene (DCE) Plume		Chlorinated solvent and BTEX plume	Groundwater plume located southeast of Hangars 13 and 14. The plume was discovered as part of the flightline groundwater investigation. Its major contaminants are DCE and BTEX.	Prevent unacceptable risks from human exposure to contaminated groundwater at Sites 36 and 37; Prevent contaminant migration from groundwater to surface water at Site 36; Restore surficial aquifer quality at Sites 36 and 37 to meet PRGs.
42	OU 12	Former Boiler House /Steam Plant and General Storehouse	1940s to 1960s	PAHs, TRPH, and metals	Steam generation from buildings. Limited information on practices since the buildings were all demolished in the late 1950s and early 1960s.	NA

**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
44	OU 12	Ditch from DRMO to Wastewater Treatment Plant (WWTP)	1942 to 1999	PAHs, PCBs, TRPH, pesticides and metals	USTs were present in the area of the WWTP. Sewage discharges from WWTP occurred. Wash water containing solvents accidentally discharged to ditch at least once.	NA
	<ul style="list-style-type: none"> <li>• Initial investigation began in 1993. Field investigations were conducted between June 1999 and April 2000 to delineate soil contamination and evaluate ecological risks from sediment and surface water pathways. An Action Memorandum for soil removal was submitted in June 2000, and 290 tons of soil were excavated and disposed in September 2000.</li> <li>• A Technical Memorandum for NFA was submitted in January 2002. It was determined that post-excavation ecological risks at the site are negligible. An NFA PP was issued in June 2002, and an NFA ROD was signed in October 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					
45	OU 11	Facility 11, Steam Generating Plant	1941 to 1999	Benzo(a)pyrene, arsenic, and vanadium	Activities related to steam generation for the base. Limited information on practices at the site.	Prevent unacceptable risk from exposure to soil with concentrations of BaPEq and TRPH greater than the FDEP residential SCTLs and concentrations of arsenic greater than the background value. Prevent unacceptable risk from ingestion of groundwater with concentrations of vanadium greater than the FDEP Groundwater Cleanup Target Level (GCTL). Reduce concentrations of vanadium in groundwater to less than the FDEP GCTL.
	<ul style="list-style-type: none"> <li>• Beginning in 1998, field investigations were conducted to delineate soil and groundwater contamination. The soil contamination was delineated, and a final Action Memorandum for soil removal was issued in May 2000. A soil RA was conducted in August 2000.</li> <li>• The RI was submitted in June 2001, the FS was submitted in August 2001, the PP was submitted in July 2003, and the final ROD was signed in October 2003.</li> <li>• A final LUC RD was submitted in April 2004 and was approved by U.S. EPA on May 11, 2004, and FDEP on June 12, 2004. A final Interim RA report was submitted on December 28, 2004, and was approved by U.S. EPA on February 8, 2005, and FDEP on January 7, 2005.</li> <li>• A final OPS Demonstration Report was submitted on November 10, 2005, and was approved by U.S. EPA on August 30, 2006, and FDEP on April 7, 2006.</li> <li>• Soil sampling was to be conducted every 5 years per the ROD was conducted in July 2009, and results were evaluated as part of the Third Five-Year Review Report, which states that soil sampling will be discontinued upon the acceptance of the document. The Five-Year Review was accepted on September 8, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Discussions regarding the current LUC boundaries, groundwater flow in the surrounding area and monitoring well results are ongoing.</li> <li>• Annual groundwater monitoring is ongoing. The next monitoring event is scheduled for July 2013.</li> <li>• Site 45 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



Table 1-1 Installation Restoration Program						
Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
49	OU 5	Skeet Range	1965 to 1998	PAHs and metals	Recreational skeet shooting generated clay pigeons and lead shots.	Prevent unacceptable risk from exposure to soil with concentrations of PAHs and lead in excess of FDEP residential SCTLs. Address the potential risk of transfer of organic and inorganic contamination from soil to groundwater from soil with concentrations that exceed FDEP SCTLs for leachability.
	<ul style="list-style-type: none"> <li>• Initial investigation began in 1999. Soil sampling indicated PAH and lead soil contamination. Additional soil sampling from 1999 to 2001 was conducted to delineate the extent of contamination.</li> <li>• A draft EE/CA was prepared in August 2001 to evaluate alternatives for site remediation. The final EE/CA was submitted in February 2002.</li> <li>• An Action Memorandum for soil removal was submitted in May 2002 and the remedial excavation, which began in August 2002, was completed at the end of December 2003. The delay was because of flooding over parts of the site.</li> <li>• A NFA ROD was signed in September 2006.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					
57	OU 9	Flight Line Building 824A & Day Tank 1 Area	1957 to 1999	BTEX and chlorinated solvents	Aircraft ground support, specifically, BTEX from Day Tank 1 Area	Prevent unacceptable risk from exposure to Site 57 groundwater with concentrations of chlorinated VOCs, BTEX, PAHs, and TRPH greater than the cleanup goals that are the federal MCLs and FDEP GCTLs. Restore contaminated groundwater concentrations to less than cleanup goals, which are the federal MCLs and FDEP GCTLs.
	<ul style="list-style-type: none"> <li>• Initial investigation began in 1997. In 1999, as part of the MB-18 SAOR, contamination of groundwater with PAHs and chlorinated compounds was reported. Additional well installation and groundwater sampling activities to delineate the extent of contamination were conducted in 2000. Because of the proximity to existing Day Tank 1 wells (Petroleum Program), and because of the presence of some common groundwater contaminants (petroleum-related components), it was decided in April 2001 that a comprehensive evaluation of groundwater in the entire area was required under the Installation Restoration Program (IRP). The RI work plan for this investigation was submitted in August 2001, and the RI field investigation occurred from September to December 2001.</li> <li>• The final RI Report was submitted in August 2002, the final FS report was submitted in October 2002, and the final PP recommending LTM with LUCs as the RA for this site was submitted in July 2003.</li> <li>• A final ROD was signed in September 2005. A final RD Work Plan for LTM was submitted in April 2003, and the Year 1 quarterly groundwater monitoring events occurred in May 2003, July 2003, October 2003, and January 2004.</li> <li>• A final Interim RA report was submitted in May 2007.</li> <li>• A final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006. A final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006.</li> <li>• The Year 10 annual sampling event was completed in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual monitoring is continuing. The Year 11 annual sampling event is scheduled for March 2014.</li> <li>• Site 57 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
 Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
58	OU 9	Flight Line Building 312	1957 to 1999	BTEX and chlorinated solvents	UST, oil/water separator, wash rack and paint booth received waste from aircraft maintenance activities.	Prevent unacceptable risk from exposure to Site 58 groundwater with concentrations of naphthalene and TRPH greater than the cleanup goals that are the federal MCLs and FDEP GCTLs. Restore contaminated groundwater concentrations to less than cleanup goals, which are the federal MCLs and FDEP GCTLs.
	<ul style="list-style-type: none"> <li>• The RI work plan for this investigation was submitted in August 2001, and the RI field investigation occurred in September 2001. The final RI report was submitted in August 2002, the final FS report was submitted in October 2002, and the final PP recommending LTM with LUCs as the RA was submitted in July 2003.</li> <li>• A final ROD was signed in September 2005.</li> <li>• A final RD Work Plan for LTM was submitted in April 2003, and groundwater monitoring began in May 2003.</li> <li>• A final Interim RA report was submitted on October 13, 2006, and was approved by U.S. EPA on October 31, 2006, and FDEP on March 12, 2007.</li> <li>• A final LUC RD was submitted on May 5, 2006, and was approved by U.S. EPA on May 9, 2006, and FDEP on May 12, 2006.</li> <li>• A final OPS Demonstration Report was submitted on August 1, 2006, and was approved by U.S. EPA on August 30, 2006, and FDEP on October 10, 2006.</li> <li>• The Year 10 annual sampling event occurred in March 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Annual monitoring is continuing. The Year 11 annual sampling event is scheduled for March 2014.</li> <li>• Site 58 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					



**Table 1-1  
Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
59	OU 9	Buildings 324/1845 Areas	1989 to present	Chlorinated solvents in groundwater	No source determined. Engine Maintenance Shack used primarily by a Naval subcontractor.	Prevent unacceptable risk from exposure to groundwater with concentrations of chlorinated VOCs in excess of their respective FDEP GCTLs. Restore groundwater quality at Site 59 to meet drinking water standards based on FDEP classification of the aquifer as a potential source of drinking water (Class G-11).
	<ul style="list-style-type: none"> <li>• A RI Work Plan was submitted in August 2004. The RI field investigation was initiated in September 2004 and completed in September 2005.</li> <li>• A final Pilot Study Work plan for bioremediation was submitted on January 11, 2006, and the pilot study was initiated the following month. The pilot study was completed in April 2007.</li> <li>• The final RI Report and final FS report were submitted on November 9, 2006 and April 6, 2007, respectively.</li> <li>• The final LUC RD was submitted as draft final on May 29, 2009, and was accepted as final on July 1, 2009, by U.S. EPA and on July 29, 2009, by FDEP.</li> <li>• The final RD was submitted on March 24, 2008, and the ROD was signed in April 2008.</li> <li>• The full-scale bioremediation system was installed and turned on in November 2008. Two of the hot spot bioremediation systems were shut down in November 2009, and the Hot Spot 2A system was expanded and operated from December 02, 2009, to July 29, 2010. The bioremediation system was taken offline on July 29, 2010.</li> <li>• The Hot Spot 2A expansion system was fully restarted after the May 23, 2011, event and shutdown prior to the May 2012 event. Quarterly sampling in the treatment system area will continue for four quarters after system shut-down.</li> <li>• Sampling will continue quarterly in the area of the expansion system for four quarters after May 2012 (through May 2013), and semi-annually across the full site. One semi-annual event will include analysis for natural attenuation parameters along with the VOCs analyzed during all rounds.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• BCT approved the installation of three additional monitoring wells downgradient of CEF-059-030-053. Well installation is scheduled for May 2013. The semi-annual event analyzing the VOCs across the site is scheduled for May 2013. This event will also be the final quarterly event post system shut-down.</li> <li>• Site 59 will be included in the 4th Five-Year Review, due September 1, 2016.</li> </ul>					
PSC 51	--	Golf Course	1950s to present	Pesticides and metals	Golf course. Limited information on practices. Site activities are an active golf course.	NA
	<ul style="list-style-type: none"> <li>• Initial field investigations were conducted to delineate soil contamination and began in April 1999.</li> <li>• The groundwater, surface water, and sediment in the streams and ponds were investigated and a Technical Memorandum for NFA was submitted in November 1999. A revised Technical Memorandum recommending NFA at this site was submitted in September 2003 and approved by the BCT.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					



**Table 1-1  
 Installation Restoration Program**

Site No.	Operable Unit (OU)	Site Name/Size	Period of Operation	Waste Type	Sources	Remedial Action Objective
OGC	OU 12	Old Golf Course	1940s to 1950s	Pesticides and arsenic	Golf course. Limited information on practices. Site activities were an active golf course until the 1950s.	NA
	<ul style="list-style-type: none"> <li>• Initial investigation began in 1993. Field investigations were conducted between November 1999 and May 2000 to delineate soil contamination at the former tee boxes and greens.</li> <li>• A final Action Memorandum for soil removal was submitted in July 2000 and 480 tons of soil were excavated and disposed in August 2000.</li> <li>• A Technical Memorandum for NFA was submitted in August 2001. An NFA PP was issued in June 2002, and a NFA ROD was signed in October 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Jet engine test cell (JETC) Building 334	Adjacent to Building 339	JP-5 Jet Fuel	<p>Two 20,000-gallon asphalt-coated, steel tanks with corrosion-resistant metal piping with cathodic protection installed in 1953 (Tanks 339-TC1 and 339-TC2).</p> <p>One 5,000-gallon steel aboveground storage tank (AST) (339-TC3) (removed in 1995).</p> <p>Past releases occurred because of tank overfilling. In October 1989, efforts to perform leak tests on Tanks TC1 and TC2 failed when inadequate seals were discovered between the manway covers and tank walls.</p>	Reduce contaminant concentrations in the petroleum-impacted soil at the site. Retard plume migration at the site. Protect human health and the environment by reducing the concentrations of hydrocarbons detected at the site to target cleanup levels.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>• A Preliminary Contamination Assessment (CA) was initiated in December 1990 by ABB Environmental Services, Inc. (ABB-ES). United States Corps of Engineers (U.S. COE) conducted a soil investigation in January 1991. The CA was completed in 1993 and a Contamination Assessment Report (CAR) Addendum (CARA) was submitted in March 1994. A CARA II was submitted in November 1994. Subsequently, an Alternate Procedures Request (APR) for free-product recovery was submitted on August 4, 1995.</li> <li>• The Remedial Action Plan (RAP) was submitted on November 22, 1996. A letter report identifying a variation in soil treatment from thermal treatment to biopiles was submitted in July 1997.</li> <li>• An Interim Remedial Action (IRA) for soil excavation was completed in September 1997. Soil removal activities took place during the first quarter of FY 1999. Additional assessment activities were conducted in May and June 2001 using direct push technology (DPT)/mobile laboratory followed by installation of permanent monitoring wells to further delineate the plume.</li> <li>• The Sampling and Analysis Report (SAR) Addendum (SARA) was prepared and concluded that two plumes exist on site and that additional soil removal was required on the southern side of Building 334. Two other areas where contaminated soil could not be excavated were recommended for institutional controls to prevent exposure.</li> <li>• A RAP was recommended to address the contaminated (accessible) soil and groundwater on the site. The RAP was submitted on September 27, 2002. FDEP issued a response on November 30, 2002, requesting additional information and clarification. A RAP Addendum was submitted on January 20, 2003.</li> <li>• The sparge system was started on November 17, 2003. The Operation and Maintenance (O&amp;M) Report covering August 1 to October 31, 2006, indicated that concentrations in monitored wells were less than GCTLs. Based on these results, the system was turned off on April 15, 2007.</li> <li>• Quarterly sampling continued through March 2012, and FDEP approved reducing the sampling frequency to semi-annual.</li> </ul> <p><b>Other Information:</b></p> <ul style="list-style-type: none"> <li>• Part of Building 339 was demolished and rebuilt in June 1991. Approximately 137.6 tons of soil was sent to Anderson Columbia for incineration.</li> <li>• A 200-gallon spill occurred adjacent to Building 339 in July 1995. Soil was excavated and placed in 55-gallon drums and properly disposed offsite.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Semi-annual groundwater monitoring is ongoing. The 2nd Semi-annual 2013 event is scheduled for September 2013.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Sal Taylor Creek Containment Areas (Dam Sites)	Along Sal Taylor Creek	JP-5 Jet Fuel	JP-5 fuel spill from the North Fuel Farm (NFF) Tank 76E that occurred on February 10, 1991. The seven dam sites are located along Sal Taylor Creek and emergency response actions were conducted at these sites after the spill. Heavy equipment and vacuum trucks were used to recover the fuel from Sal Taylor Creek.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>CAs was conducted in 1991 and 1994. The field investigation included soil borings, surface water and sediment sampling, and monitoring well installation. A CAR was submitted in July 1994. Based on FDEP comments, further investigations were conducted in 1995. The investigations included toxicity assessment and surface water and sediment sampling. A CARA was submitted in March 1996 and approved by FDEP in May 1996.</li> <li>Per Base Realignment and Closure (BRAC) Cleanup Team (BCT) recommendations, sediment samples were collected for toxicity testing in December 1996. Samples were collected from the dam sites where biomonitoring or remediation was recommended in the CARA. Toxicity testing results were submitted in February 1997.</li> <li>A CARA recommending no further action (NFA) at all dam sites, except Possum Dam, was submitted on May 19, 1997. An additional sample was collected at the Possum Dam site in December 1997. A CARA recommending NFA at Possum Dam was submitted in February 1998.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
103 <sup>rd</sup> Street Pipeline	Intersection of 103 <sup>rd</sup> and Ave. A	Type JP-5 Jet fuel	A "pinhole" leak in the 8-inch pipeline conveying fuel from Naval Air Station (NAS) Jacksonville to NAS Cecil Field was discovered and repaired in the Spring of 1997. An IRA was performed to remove petroleum impacted soils and to repair the pipeline. The pipeline was then taken out of service. In the spring of 1998, a site assessment was initiated.	Eliminate the presence of LNAPL. Reduce the soil and groundwater contaminant concentrations to target levels established by the FDEP as eligibility requirements for a natural attenuation monitoring program. The following paragraphs list the target levels for site specific COCs for each of the contaminated media.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>Investigation activities were conducted from September to December 1998 to delineate free product and a SAR was submitted in February 1999. A RAP was submitted in August 1999 recommending air sparging (AS)/soil vapor extraction (SVE) to address soil and groundwater plumes. The installation of the AS/SVE system was completed in the third quarter of FY 2000. It began operation in June 2000 and continued to operate until May 2005, at which time a Site Rehabilitation Completion Order (SRCO) stipulating NFA at the site was issued by FDEP.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
JP-5 Spill Area	Adjacent to Tank 76-E, northeast corner of NFF	JP-5 Jet Fuel	On February 10, 1991, JP-5 fuel overflowed from Tank 76-E. The fuel flowed down the slope on the east side of the earth-mounded tank (EMT) into a small ditch that discharges into Sal Taylor Creek.	See NFF
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A preliminary CA was conducted in 1991 and a CA was conducted from May 27 through June 5, 1992. The investigation included soil borings and monitoring well installation and the CAR was submitted in July 1994. Based on FDEP comments on the CAR, further investigations were conducted in 1995.</li> <li>A CARA, submitted in March 1996, was approved by FDEP in May 1996. Recommendations for remedial actions (RAs) were included in the RAP for the NFF site. Supplemental samples were collected in September 1997, and a CAR letter report was submitted in November 1997.</li> </ul> <p><b>Other Information:</b></p> <ul style="list-style-type: none"> <li>From September 1995 through January 1996, an IRA was conducted by Bechtel. The IRA included removal of about 2,750 cubic yards of contaminated soil [greater than 1000 parts per million (ppm)] from the site. Additional soil removal activities were performed in July and August 1999.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
South Fuel Farm (SFF)	Facility 43, south of intersection of 2nd Street and "A" Avenue	JP-5 Jet Fuel	Location of several ASTs, underground storage tanks (USTs), and EMTs. All ASTs were removed in 1995 and all USTs and EMTs (except Tank 342-DT) were removed in July 1994.	Achieve cleanup of contaminated areas to levels prescribed in Chapter 62-770 FAC.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>CA was completed in December 1991 and CAR was submitted in July 1992. Upon review of CAR, FDEP requested additional investigation at this site. Supplemental investigation was completed in July 1995 and CARA was submitted in January 1996.</li> <li>A RAP addendum submitted on October 28, 1996, was approved by FDEP in February 1997.</li> <li>The remedial system (biosparging [BS]) was installed in February 1998 and system start-up activities were completed in March 1998. The remedial system was operating, but not to the satisfaction of the Navy. Supplemental site investigations and system evaluation were completed in November 2002, May 2003, and October 2003.</li> <li>A RAP Addendum documenting the results of the supplemental assessment and recommending modifications to improve the performance of the system was submitted on July 1, 2004.</li> <li>A final Technical Memorandum submitted on June 6, 2006, recommended shutting down the BS system and adding bioventing wells to address soil contamination.</li> <li>A Post-Active Remediation Monitoring (PARM) work plan was submitted in January 2008. The PARM Report which covered the events from February 2008 through March 2009 was submitted August 17, 2009, recommending further monitoring at select wells.</li> <li>It was decided by the BCT that a Site Assessment Report (SAR) would be appropriate. The SAR was prepared and submitted August 5, 2011. An additional round of sampling event was conducted the week of August 22, 2011, to supplement the SAR, based on FDEP comments. A Draft Final version of the SAR was submitted on December 21, 2011. FDEP review of the SAR is pending.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The 2nd semi-annual 2013 groundwater monitoring event is scheduled for August 2013.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Truck Stand Site	Loop road south of NFF	JP-5 Jet Fuel	Used as a loading station for the flightline refueling tank trucks resulting in probable spills and soil staining. The site consists of a control building, a pumping station, asphalt and concrete parking area, and a retention pond.	See NFF
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A preliminary CA was conducted in 1990. A CA was completed in 1991 and CAR was submitted in May 1992. Subsequently, CARA was submitted in July 1994. Upon review of CARA, FDEP recommended additional investigation that included monitoring well installation, collection of groundwater samples, and advancement of soil borings. CARA was submitted to FDEP in March 1996. The CARA II was approved by FDEP in April 1996.</li> <li>The Monitoring Only Plan (MOP), submitted on December 6, 1996, was approved in February 1997.</li> <li>Additional contaminated soil was removed in August 2000 and a sampling event was performed in March 2000. The September 2000 semi-annual groundwater sampling event was postponed because several monitoring wells were destroyed during the source removal activities. The monitoring wells were replaced and the sampling resumed in February 2001, and a report was submitted in April 2001.</li> <li>The April 2001 sampling report recommended that a RAP be prepared. A supplemental assessment to better delineate the groundwater plume began in the fourth quarter of FY 2002, and it was completed in January 2003. A letter report describing the results was submitted in June 2003. A remedial strategy and remedial system design were prepared for the site as part of the RAP prepared for the NFF Site. The RAP, which recommended AS and SVE, was submitted to FDEP in late March 2004.</li> <li>The Truck Stand has been incorporated into the NFF site.</li> </ul> <p><b>Other Information:</b></p> <ul style="list-style-type: none"> <li>An IRA to remove soils saturated with free product was completed in May 1996. Approximately 1,000 cubic yards of soil were excavated and properly disposed offsite. An RA report was submitted in June 1996.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
Sal Taylor Creek Bank Sites	Along Sal Taylor Creek	JP-5 Jet Fuel	Activities were conducted following the JP-5 fuel spill in February 1991.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>Nine locations along the banks of Sal Taylor Creek were investigated to determine extent of soil and groundwater contamination due to the 1991 fuel spill. Results of the 1992-93 investigation were presented in the July 1994 CAR.</li> <li>Per FDEP recommendations, additional investigations were completed in September 1995. The CARA submitted in March 1996 was approved by FDEP in April 1996. The CARA recommended natural biodegradation for the RA at these sites. Temporary wells were installed in December 1996 at the two locations recommended by FDEP. Groundwater samples were collected from these wells in January 1997.</li> <li>A CARA presenting the groundwater sampling results from the temporary wells, along with a recommendation for NFA, was submitted on June 16, 1997. The NFA recommendation was approved by FDEP.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Day Tank 1	Northeast of Jet Road	JP-5 Jet Fuel	200,000-gallon interior-lined asphalt-coated steel tank containing JP-5. Tank was installed in 1956. Location of fuel spill in 1981; approximately 497,000 gallons of JP-5 fuel were spilled because of overflow; approximately 250,000 gallons were recovered.	Containment and physical removal of free product.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>• The CA was completed in 1993 and a CARA was submitted to FDEP in December 1993.</li> <li>• An APR was submitted to FDEP in August 1995 to recover free product. The APR was approved in September 1995. Per FDEP recommendation, five additional wells were installed and sampled in September 1995. A revised RAP was submitted in January 1997, recommending excavation and the installation of a BS/SVE system.</li> <li>• Day Tank 1 was removed in December 1999 and the excavation of the soil mound occurred in December 1999 and January 2000. The BS/SVE system has been in place since 2000.</li> <li>• Semi-annual groundwater monitoring was conducted in July 2000 and January 2001. Shortly afterward, it was determined that the petroleum plume from Day Tank 1 was co-mingling with a chlorinated solvent plume under investigation near Building 824A. The BCT decided to postpone further groundwater monitoring at Day Tank 1 and expand the scope of the Building 824A (Site 57) to include the Day Tank 1 plume area. The Site 57 investigation also included some free product delineation.</li> <li>• At the June 2002 BCT meeting, it was agreed to conduct additional soil delineation outside the original source removal area to address soil contamination encountered by the Remedial Action Contractor (RAC). In August 2002, a flame ionization detector (FID) was used to delineate soil contamination based on headspace measurements. In October and November 2002, soil samples were collected from approximately 80 locations to delineate the extent of contamination. Additional temporary monitoring wells were installed to confirm the extent of free product. Additional delineation of soil contamination was completed in early September 2003, and excavation of the remaining contaminated soil and the free product was completed during the 1st quarter of FY 2004.</li> <li>• A SARA was submitted in November 2003, resulting in a removal action being performed during the 1<sup>st</sup> quarter of FY 2004. An additional soil investigation began in April 2004 resulting in an additional excavation of soil, which was completed in September 2004. The final SARA No. 2 for Day Tank 1, recommending NFA for soil, was submitted on January 30, 2006. FDEP issued a Natural Attenuation Monitoring Plan Approval Order (NAMPAO) on October 19, 2006.</li> <li>• A report detailing the disassembly and removal of the BS/SVE system at the site was submitted October 14, 2009. The 2010 semi-annual events were conducted in March and September 2010, and the associated report was submitted as final on February 16, 2011. The latest sampling event was conducted on March 16, 2011.</li> <li>• A Uniform Federal Policy-Sampling and Analysis Plan (UFP-SAP) was submitted on March 25, 2011.</li> </ul> <p><b>Other information:</b></p> <ul style="list-style-type: none"> <li>• A BS/SVE system was installed by JA Jones/CH2M Hill in 2000. The system is shut down. In February 2002, JA Jones began work to locate and close the pipeline that exists between Day Tank 1 and the North-South High Speed Refuelers.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• Sampling is continuing semi-annually. First semi-annual 2013 event is scheduled for March 2013.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
NFF Area	Northeast corner of A Avenue and Loop Road	JP-5 Fuel	Six 595,000-gallon, interior-lined, asphalt-coated, steel, EMTs (76, 76A through 76E). Tanks 76 and 76A were installed in 1952 and remaining tanks were installed in 1954. In 1987, all tanks were relined and overflow protection was installed. In addition, Tank 76 was equipped with automatic shut-off system. Tank 76E was taken out of service in 1991. However, the following spills occurred: 22,772-gallon spill on August 3, 1987; 913,000-gallon spill on February 10, 1991; and 1,800-gallon spill on November 28, 1993.	Remediate contaminated groundwater. Protect human health and the environment by reducing the concentrations of groundwater contamination at the site to GCTLs.
<p><b>Initial Remedial Action:</b></p> <ul style="list-style-type: none"> <li>• Completed installation of a catalytic oxidizer at the NFF site. Also installed 15 extraction wells. Nine of these extraction wells were connected to the bioslurper unit. Quarterly groundwater sampling was completed during this reporting period. Continued free-product recovery activities. The bioslurper system was shut down in April 1998.</li> </ul> <p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>• CA was completed in 1991. The CAR was submitted in June 1992. Supplemental investigation was completed in 1993/94. Field work was conducted in April 1994 to investigate the 1,800-gallon spill. In July 1994, FDEP recommended additional investigation that was completed in 1995. A CARA was submitted in April 1996. Supplemental assessment recommended by the BCT was completed in November 1996. The RAP and the revised CARA were submitted in January 1997. Supplemental soil samples were collected in September 1997 and the results were presented in a RAP letter memorandum submitted in November 1997. Additional soil samples for Kerosene Analytical Group (KAG) parameters were collected in April 1998.</li> <li>• The BCT recommended that a pilot study be conducted to evaluate recirculation wells as a viable alternative for groundwater treatment. The 1999 recirculation well pilot-scale study showed difficulties in operation of the system. The technology was eliminated in favor of AS.</li> <li>• A RAP Addendum was submitted in August 1999. This addendum also described the removal of the tanks, earth mound, and soil beneath the tanks. The source removal action began in the 3rd quarter of FY 2000 and was completed in mid-February 2001. Supplemental assessment activities were initiated in July 2001. These activities included the use of DPT/membrane interface probes (MIPs) followed by installation of permanent monitoring wells to evaluate the current conditions and the impact of the source removal activities recently conducted at the site. Monitoring well installation and sampling were completed in February 2003, and the results indicated the need for additional wells. The additional well installation was completed in July 2003.</li> <li>• The Supplemental SAR was submitted to the FDEP in October 2003. A RAP Addendum recommending AS/SVE was submitted to the FDEP in late March 2004. FDEP issued a directive to discontinue AS/SVE system operation on October 24, 2005.</li> <li>• A site-wide groundwater sampling event conducted in May 2007 indicated a significant reduction in the size of the groundwater plume. An Optimization Study was conducted to evaluate the path forward, and the Optimization Report was submitted in June 2008. The recommendations were approved by FDEP on August 20, 2008. The AS system was restarted in November 2008 with a reduced number of wells operating.</li> <li>• The UFP-SAP was submitted on March 25, 2011.</li> <li>• The air sparge system was restarted in December 2011, because concentrations rebounded after the system was shut down. It operated with minor down time until it was shut off in August 2012. Between the May 2012 and August 2012 BCT meetings, the system ran for one week and was shut off for one week, as the system was effective with the pulsing of the unit and the cost of electricity to run the system is very high.</li> <li>• Based on discussions with FDEP and EPA in July 2012, it was determined that a new downgradient well was required based on GCTL exceedances in the downgradient area. The new well, CEF-076-118D, was installed on October 1, 2012.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
<p><b>Other information:</b></p> <ul style="list-style-type: none"> <li>The soil source removal, conducted by JA Jones/CH2M Hill involved the excavation 140,957.03 tons of petroleum-contaminated soil and the recycling of 19,550 gallons of free product and petroleum contact water. The Source Removal Report (SRR) was approved on February 22, 2002.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Quarterly sampling is continuing is to continue for four quarters after the system shut down. The next quarterly sampling event is scheduled for June 2013.</li> </ul>				
Tank 199	Building 199, Southeast corner of C Avenue and 6th Street	Heating oil	Leaking 2,000-gallon underground heating oil tank	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A CA plan was prepared in August 1996. The CA was initiated in September 1996 and the field program was completed in December 1996. The CAR was submitted in March 1997. Additional soil samples were collected in September 1997, and the results were presented in a CAR memorandum submitted in November 1997. Soil samples for KAG analysis were collected in March 1998. Soil removal activities took place during the 1st quarter of FY 1999.</li> <li>Natural attenuation monitoring began in July 1999 on a semi-annual basis and was changed to annual after the February 2000 event. The latest annual sampling event occurred during January 2007, and the associated Supplemental Assessment Letter Report was submitted on February 28, 2007.</li> <li>A Site Rehabilitation Completion Letter Report was submitted to the FDEP on April 26, 2007, and the SRCO for this site was issued on September 6, 2007.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
Day Tank 2	Facility 342-DT, south of intersection of 2nd Street and "A" Avenue	JP-5 fuel	Several USTs and ASTs were located adjacent to the Day Tank 2 facility. In October 1996, free petroleum product was observed in a piezometer located south of Day Tank 2. The release was believed to have been from the 200,000-gallon earth mounded, interior-lined, asphalt-coated, steel tank or associated piping. Approximately 29,000 gallons of free product were recovered. Day Tank 2 was taken out of operation in October 1996 and removed in 1997.	No RAOs
<p><b>Initial Remedial Action:</b></p> <ul style="list-style-type: none"> <li>Day Tank 2 was decommissioned in 1996 and was removed in August 1997.</li> </ul> <p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A CA plan was submitted in June 1997. The field investigation at Day Tank 2 included installation of several monitoring wells, DPT groundwater screening points, soil borings, and soil sampling in March 1998.</li> <li>SAR was completed in July 1998.</li> <li>A source removal plan was submitted in October 1998, and the removal action was conducted in November 1998. Monitoring wells that were destroyed during the IRA were replaced and sampled in April 1999. A report describing the analytical results was completed in May 1999.</li> </ul>				



**Table 1-2  
 Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
<ul style="list-style-type: none"> <li>Groundwater contamination will be addressed as part of OU 9, Sites 36/37.</li> </ul>				
<b>Upcoming and Ongoing Activities:</b> <ul style="list-style-type: none"> <li>None.</li> </ul>				
Tank 46 (Includes 46R, 46D, 46SUL, and 46UL)	Building 46 across D Avenue from the Bachelor Officers Quarters	Regular and unleaded gasoline and diesel fuel	A total of eight leaking tanks: <ul style="list-style-type: none"> <li>- four 2,000-gallon tanks</li> <li>- two 10,000-gallon tanks</li> <li>- two 6,000-gallon tanks</li> </ul>	Soil remedial action goals for Building 46 site-specific COCs are listed in Table 2 of the University of Florida Soil Cleanup Target Level Development Web Site. Groundwater remedial actions goals are listed in Table 1 of the University of Florida Soil Cleanup Target Level Development Web Site.
<b>Current Investigative Status:</b> <ul style="list-style-type: none"> <li>A RAP was submitted in March 1999. This RAP included the design of an AS/SVE System for the remediation of contaminated soil and groundwater. The RAP was revised to use a nutrient-enhanced BS system to remediate the source area and plume in June 2000. Installation of the remediation system was completed in January 2001. The RAC reported contaminated groundwater exceeding GCTLs in a perimeter well.</li> <li>A supplemental assessment to delineate this contamination began during the fourth quarter of FY 2002 and was completed in January 2003. A letter report describing the results of the investigation was submitted on May 28, 2003.</li> <li>A RAP modification was issued in March 2004 to extend the current system to adequately remediate that part of the groundwater plume that was not currently being affected. The two PHOSter systems (east and west) were removed and were replaced by one BS system in the eastern portion of the site.</li> <li>A Remedial Action Optimization Report was submitted in May 2007 to address path forward for two small hot spots with exceedances of FDEP Natural Attenuation Default Concentrations (NADCs) for naphthalene and methyl tertiary butyl ether (MTBE). The Optimization Report recommended redirecting flows to these two hotspots and bringing the west side BS system offline. In January 2008, FDEP approved discontinuing use of the west system.</li> <li>Both systems were removed from the site on January 31, 2008. A new AS system was installed on the eastern side of the site on September 17, 2008. The AS system was shut down in December 2009.</li> <li>A final UFP-SAP was submitted on March 25, 2011.</li> </ul>				
<b>Upcoming and Ongoing Activities:</b> <ul style="list-style-type: none"> <li>Semi-annual monitoring is on-going, and the 2<sup>nd</sup> semi-annual event is scheduled for September 2013.</li> </ul>				



**Table 1-2  
 Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Tank 9L1 and 9L2	Building 9 near the corner of B Avenue and 3 <sup>rd</sup> Street	Gasoline	Two leaking tanks, each 1,250 gallons	Soil and groundwater remediation objectives are based on Table V, Selected Soil Cleanup Target Levels and Groundwater Cleanup Target Levels, as listed in the FDEP guidance manual.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A RAP was submitted in February 1999. This RAP included the design of an AS/SVE system for the remediation of contaminated soil and groundwater. The RAP was revised to use a nutrient-enhanced BS system to remediate the source area and plume in June 2000. Installation of the remediation system was completed in January 2001, and the system was in operation through the end of 2005.</li> <li>FDEP has declared this a NFA site with orders to abandon the wells.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
312 O/W	North side of Building 312 (Corrosion Control Hangar)	Used oil group constituents	Leaking 900-gallon oil/water separator (OWS) tank or the associated piping	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A confirmatory sampling investigation of soil and groundwater was initiated in July 1998.</li> <li>A Confirmation Sampling Report (CSR) was submitted in 1999. The CSR indicated that the site had been impacted by used oil group constituents.</li> <li>A site assessment using DPT/mobile laboratory screening was conducted, followed by installation of permanent monitoring wells. A SAR recommending a source removal and follow-up groundwater monitoring was submitted to FDEP in April 2002. FDEP issued a letter indicating that additional assessment was required. The additional assessment activities were completed in mid-July 2003.</li> <li>A Supplemental SAR was issued on September 5, 2003. A source removal was performed by WRS in October 2003 to remove petroleum impacted soil. A SRR was submitted to FDEP in December 2003 indicating that stained soil was observed in one location during the excavation. This area was subsequently sampled, and the laboratory results indicated that concentrations of COCs were less than SCTLs.</li> <li>An NFA recommendation was subsequently submitted to FDEP on November 9, 2006, and FDEP approved the NFA recommendation with an SRCO was submitted by FDEP on January 47, 2007.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
824 O/W	South side of Building 824 (Avionics Shop)	Used oil group constituents	Leaking oil/water separator (capacity unknown) and/or associated piping	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A confirmatory sampling investigation was initiated in September 1998. A CSR was submitted in 1999. The CSR indicated that the site had been impacted by used oil group constituents.</li> <li>A site assessment using DPT/mobile laboratory screening, followed by the installation of permanent monitoring wells was conducted.</li> <li>The SAR recommended NFA for the site. At the August 2002 BCT meeting, FDEP indicated that the review was complete, and an NFA letter was issued by FDEP on August 29, 2002.</li> </ul> <p><b>Other information:</b></p> <ul style="list-style-type: none"> <li>A SRR was submitted by the RAC on December 16, 2000.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
North-South Apron Plume (NSAP)	East of Building 815 on eastern edge of north-south flightline apron	Unknown	Possible leakage from storm sewers or downward migration of an upgradient plume from an unknown site.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>Earlier investigations indicated that VOCs were present in the groundwater at concentrations that exceeded FDEP GCTLs. Additional assessment activities conducted between November 1999 and November 2000 confirmed that VOCs were present in the groundwater at concentrations that exceeded GCTLs. A SAR was submitted recommending implementation of natural attenuation monitoring.</li> <li>FDEP issued a NAMPAP in March 2001. The first three quarterly events indicated that groundwater VOC concentrations continued to exceed GCTLs, and the plume appeared to be static, and a supplemental assessment was recommended.</li> <li>The additional assessment began during the fourth quarter of FY 2002. A letter report was submitted on January 14, 2003, recommending natural attenuation monitoring. An FDEP response, issued on May 2, 2003, requested additional assessment to delineate the vertical extent of contamination. The installation and sampling of additional wells was completed in July 2003, and a second supplemental assessment letter report was submitted to FDEP in December 2003. FDEP issued a response on January 30, 2004, requesting additional sampling.</li> <li>The Navy issued a Scope of Work (SOW) for the additional sampling on July 20, 2004, and the sampling was completed on March 24, 2005. A Supplemental Assessment Letter Report was issued in August 2005 and approved by FDEP in September 2005. A new groundwater monitoring program began on July 7, 2006.</li> <li>A final UFP-SAP was prepared for the site, and submitted on April 12, 2010, and monitoring is ongoing.</li> <li>Monitoring frequency was changed to annual after the January 2012 event.</li> <li>Year 8 annual sampling was conducted in January 2013, and a confirmatory sampling event was recommended to be performed in July 2013 to confirm that levels of benzene were detected less than its GCTL and FDEP approved the recommendation.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The next sampling event will be conducted in July 2013.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 82/ Tank G-82	Eastern side of Building 82 on western edge of north-south flight line apron		Remaining contaminated soil next to Building 82 removed in 2000.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A site investigation was conducted from October 1999 to July 2000. Petroleum contaminants were detected in the soil and groundwater. A total of 148.1 tons of contaminated soil were removed and approximately 49 yards of contaminated soil were left in place because of physical obstructions.</li> <li>A groundwater Monitoring Only Natural Attenuation (MONA) proposal was recommended to begin after the excavation was completed. On April 18, 2002, additional subsurface soil samples were collected for TRPH Subclassification Evaluation to determine if the contaminated soil left in place required excavation. All results were less than FDEP Industrial SCTLs; therefore, the soil was left in place and land use controls (LUCs) were put in place.</li> <li>A Monitored Natural Attenuation (MNA) Work Plan was submitted in May 2008; MNA monitoring began in July 2008, and sampling was performed quarterly. Sampling was changed to semi-annual frequency after the Year 1 Fourth Quarter Report.</li> <li>A final UFP-SAP was prepared for the site, and submitted on April 12, 2010.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Semi-Annual sampling is continuing. The Year 6, 1<sup>st</sup> semi-annual event is scheduled for October 2013.</li> </ul>				
BP Wells	Southeast of Building 880 on western edge of the north-south flightline apron		ASTs in secondary containment and an associated OWS.	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A groundwater investigation was conducted in 1999. The results from the 1999 investigation indicated that contaminants of concern (COCs) in groundwater exceeded GCTLs in two monitoring wells. Additional assessment activities were conducted in February 2000. The SAR submitted in August 2000 indicated that groundwater had been impacted by VOCs. In response to the SAR, FDEP issued a NAMPPO.</li> <li>The Navy gave approval to conduct a treatability study at this site using in-situ oxygen curtain (iSOC) technology. The iSOC system was installed and began operation in October 2002 after a baseline groundwater sampling event was conducted. The Fourth Quarter Monitoring and Annual Treatability Study Evaluation Report, recommending that the treatability study be discontinued, was approved June 2004.</li> <li>Natural Attenuation Monitoring Plan (NAMP) and an MNA Work Plan were submitted in May 2008, MNA monitoring began in July 2008.</li> <li>A final UFP-SAP was prepared for the site, and submitted on April 12, 2010.</li> <li>It was decided by the BCT that a chemical injection (ORC Advanced) event would take place at BP Wells to address the NADC exceedances.</li> <li>Semi-annual monitoring is on hold. The ORC Advanced injection was conducted in November 2011, and the 1<sup>st</sup> Post construction/ORC injection sampling event was conducted in May 2012. The 2nd Post construction/ORC injection sampling event was conducted in December 2012.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>The 3rd Post construction/ORC injection sampling event is scheduled for June 2013.</li> </ul>				



**Table 1-2  
 Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 502, Tank 502	West of Building 502, south of the perimeter road	Fuel oil	Leaking 1,000-gallon fuel oil tank was removed in 1997	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>• Tank 502 was removed in 1997, followed by a soil source removal.</li> <li>• The FDEP provide a MOP in July 1999 that required the semi-annual sampling of various monitoring wells at the site.</li> <li>• The Supplemental SAR recommended several modifications to the monitoring program.</li> <li>• Additional characterization of the source of contamination was conducted. Tetra Tech installed a total of 10 step-out soil borings in the vicinity of the source well in November 2006 for additional site characterization. During the November 2006 sampling event, total petroleum hydrocarbons (TPH) were detected in excess of the soil cleanup target level (SCTL) at four soil borings. According to the SAR Addendum, excavation in the vicinity of these soil borings was recommended.</li> <li>• A Dig and Haul Package was submitted on September 11, 2007.</li> <li>• Excavation occurred in June 2010 and approximately 90 cubic yards of soil were removed.</li> <li>• Post-excavation groundwater monitoring was conducted and the results indicated concentrations were all less than GCTLs for consecutive rounds; therefore, it was proposed that the site be closed out.</li> <li>• A Site Rehabilitation Completion Report requesting NFA was prepared, and a Site Rehabilitation Completion Order was signed by FDEP on November 10, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Ocala F-18 Crash Site	In Ocala National Forest approx. 82 miles south of Cecil Field and approx. 22 miles southeast of Ocala, Florida	Jet Fuel	Past releases due to crashed F-18 Jet	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>In June 1994, a Navy F-18 jet crashed in the Ocala National Forest.</li> <li>A site assessment and initial RA were conducted. A MONA plan was submitted in April 1998 requiring quarterly monitoring.</li> <li>Based on the new sampling data, a revised MONA was proposed with new milestone objectives for different COCs and different wells, and the MONA was approved in October 2005.</li> <li>A supplemental soil sampling event was to be conducted in the area around the source well because February 2008 concentrations of benzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene exceeded end of Year 3 action levels specified in the NAMP AO. The Year 4 event was conducted in March 2009 and the supplemental soil sampling was conducted concurrently.</li> <li>It was decided by the BCT that semi-annual sampling would be appropriate for this site to monitor for seasonal fluctuations. The first semi-annual, Year 7 sampling event was conducted August 22, 2011, and the associated report was submitted on November 30, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Semi-annual sampling is ongoing. The Year 8, 2<sup>nd</sup> semi-annual event is scheduled for August 2013.</li> </ul>				



**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 81, Tanks 81 A, B, and C	Next to former locations of Building 81, near PCA 25	Gasoline	Tanks 81 A, B, and C	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>The 2002 SAR identified shallow groundwater contamination and concluded that soil contamination was adequately addressed by previous source removals in the area. The SAR recommended implementation of a groundwater monitoring program and groundwater use restrictions. A NAMP was signed by FDEP on October 1, 2002.</li> <li>The Supplemental Site Assessment Letter Report recommended that additional wells be installed to delineate shallow and intermediate groundwater contamination. Based on sampling results, preparation of a revised NAMP and continuation of the quarterly monitoring program was recommended. The revised NAMP was submitted on November 21, 2007.</li> <li>A UFP-SAP was prepared for the site and submitted in July 2010 and monitoring is ongoing based on the SAP.</li> <li>A work plan to install a downgradient well from CEF-081-261 was submitted in April 2013 and is pending approval. Year 3, 2nd Semi-annual sampled occurred in April 2013.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Long-term monitoring is continuing, with the sampling frequency being semi-annual. The Year 3, 2nd semi-annual event is scheduled for October 2013.</li> </ul>				
Building 271	To the west and east of Bldg 271.	Gasoline	Four USTs and 2 OWSs	No further remedial action is planned for soil. For groundwater: retarding plume migration at the site. Protecting human health and the environment by reducing the concentrations of hydrocarbons detected at the site to target cleanup levels.
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A RAP was submitted in September 2002 to the FDEP and a RAP Addendum was submitted to the FDEP in January 2003. AS was selected as the remedial alternative. The AS system was installed from September to November 2003, and commenced operation on November 17, 2003.</li> <li>The system was put back online, and quarterly sampling is ongoing. The system was taken offline in September 2008.</li> <li>A draft UFP-SAP was submitted to the BCT in August 2010.</li> <li>In June 2012, based on the Final 2011 Groundwater Monitoring Report for Building 271, FDEP recommended additional evaluation of the site. The results of the additional assessment may be used in support of a future RAP for the site.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Quarterly sampling is ongoing. The first quarter 2013 event is scheduled for June 2013.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 290A, Tank G-290A	located north of Building 290A, southeast of intersection of north-south and east-west runways	Diesel	250-gallon AST used for Standby Generator	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A CSR Addendum recommending SRR was submitted December 31, 2002. FDEP requested resubmittal in August 2003. FDEP approved proposed soil excavation for NFA on November 30, 2006. Draft Dig and Haul Package submitted May 14, 2007, and FDEP provided comments on August 31, 2007. The site was discussed during the September 2007 BCT Meeting, and additional sampling was recommended. Sampling was conducted on September 14, 2007, and a revised Dig and Haul Package was submitted on October 13, 2007.</li> <li>The tank was removed by Jacksonville Aviation Authority in June 2007. A Dig and Haul Package was submitted on November 16, 2007. Excavation took place in June 2010. One source area monitoring well was installed in August 2010, and the well was sampled in September 2010 to verify absence of groundwater contamination. A Site Rehabilitation Completion Report was submitted on December 15, 2010, and approved by FDEP January 31, 2011.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>None.</li> </ul>				
Hangar 815 Wash Rack	North of Building 815, South of Building 1845	Wash water, petroleum products	Wash Rack	No RAOs
<p><b>Current Investigative Status:</b></p> <ul style="list-style-type: none"> <li>A SAR for the site, now designated building 815 Wash Rack Area, was submitted in August 2000 and identified TRPH and naphthalene groundwater contamination at the site. MONA was recommended based on the results of the SAR. Semi-annual monitoring began in January 2001.</li> <li>The site was transferred to the IRP to be addressed with Site 59, but was transferred back to the Petroleum Program based on discussions at the September 2007 BCT Meeting.</li> <li>A SAR Addendum was recommended during the September 2007 BCT meeting and was submitted to FDEP on May 20, 2008.</li> <li>A NAMPAO was issued on November 16, 2008, and a final UFP-SAP was submitted on April 12, 2010.</li> <li>Sampling frequency was changed from semi-annual to annual as agreed upon at the November 15, 2011, BCT meeting and with FDEO approval of the second Semi-Annual, Year 3 Groundwater Monitoring Report.</li> </ul> <p><b>Upcoming and Ongoing Activities:</b></p> <ul style="list-style-type: none"> <li>Annual sampling is ongoing. The Year 6 annual event is scheduled for January 2014.</li> </ul>				

**Table 1-2  
Petroleum Program and Munitions Response Program**

Site Name	Site Location	Waste Type	Sources	Remedial Action Objective
Building 365 Munitions Response Area (MRA)	On the Northwestern edge of the North-South Flightline	UXO	Munitions discarded by unknown persons.	No RAOs
<ul style="list-style-type: none"> <li>• Munitions were first identified at the Site in September 2004. A Munitions Response Team visited the site and talked with one of the responding Florida Air National Guard Explosives Ordnance Disposal (EOD) Technicians. An Explosives Safety Submission (ESS) was submitted in October 2004 and approved by the Department of Defense Explosives Safety Board (DDESB) in November 2004. The initial mag and dig operation was conducted in December 2004, and it was determined that the area needed to be expanded. The area was expanded according to a Work Plan submitted in February 2005 and MRP investigations continued.</li> <li>• Munitions response on 28.5 acres completed to date.</li> </ul> <p><b>Upcoming and Ongoing Activities</b></p> <ul style="list-style-type: none"> <li>• Munitions response fieldwork started in November 2011 and completed on December 5, 2011. No MEC items were found in periphery grids. The MEC items that were recovered during fieldwork activities are currently stored in a magazine at Hanger 860 and are scheduled to be disposed of by demolition in April 2012. The After Action Report is pending.</li> </ul>				
Hangar 860 MRA	On the Northwestern edge of the East-West Flightline	UXO	Munitions discarded by unknown persons.	No RAOs
<ul style="list-style-type: none"> <li>• Temporary storage of munitions is reported to have taken place at the Building 865 Facility.</li> <li>• A possible MEC item was first identified in the MRA in February 2005 during a visual site survey for an upcoming construction project. Munitions response has continued since in various investigations.</li> <li>• Munitions response on 44.5 acres completed to date.</li> </ul> <p><b>Upcoming and Ongoing Activities</b></p> <ul style="list-style-type: none"> <li>• Field work started in November 2011. MEC was found in periphery grids; therefore, additional munitions response is required to the west and south of current MRA. The MEC items that were recovered during fieldwork activities are currently stored in a magazine onsite and are scheduled to be disposed of by demolition in April 2012. The After Action Report is pending.</li> </ul>				